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A SYSTEM OF LOCAL GUIDES FOR HOME DEFENCE.

By Colonel W. L. DAVIDSON, C.B., Commanding Royal Artillery, North-Eastern District.

Thursday, 26th March 1903.

Major-General Sir J. C. ARDAGH, K.C.M.G., K.C.I.E., C.B., late R.E., *p.s.c.*, in the Chair.

ANY scheme of home defence logically involves the idea of invasion, actual or attempted.

To those who are officially interested in such a scheme, the question necessarily arises: Are we taking any steps to prevent panic, to supply the population with food, or to organise the enormous reserve of manhood which this country undoubtedly possesses? If you wish for peace, you must prepare for war, and von Moltke tells us that "War is the practical adaptation of the means at hand to the attainment of the object in view."

The reserve strength of the country is enormous: but for the purpose of home defence it is practically effete for want of proper organisation.

Under the voluntary system, considering the money that is spent, we do not always attract the right kind of man to the Colours at the present rate of pay. Besides which, there is a large class who contribute in no way to the defence of their country.

No one who reads the accounts of the meetings held by such societies as the "Navy League," the "National Service League," and similar associations, can doubt that there is an earnest wish among thousands of fine young fellows, who are unable, for divers reasons, to become Yeomen or Volunteers, to qualify themselves in some way, to serve their country at a pinch.

In this lecture, without any claim to originality and with all diffidence, one plan for utilising their services is placed before you,

in the hope that it may raise a discussion which will have some practical value.

It is unnecessary to recall to an audience like the present the history of this country. But there are millions of adults who accept with blind ignorance the security they have enjoyed, and do enjoy, in their homes; they have no notion that they are living on the position gained by the patriotism and gallantry of their forefathers; but, while many are ready enough to criticise and complain of any steps taken by the Government for efficiency for "Home Defence," they do nothing personally to ensure that end.

Such people require to be reminded that only 100 years ago, at the meeting of Parliament in November, 1802, the state of the country as regards defensive preparation was warmly debated. Additions were made to the Regular Army, and His Majesty authorised that the Militia should be embodied.

War was declared with France on the 16th May, 1803, and Pitt, in defending the approaching contest, expressed his conviction that some system, far more vigorous than any which had been adopted, would be found requisite in our preparation for national defence. He thought that it was not sufficient to make those naval and military preparations which would prevent the success of any particular attempt at invasion: but that such extensive arrangements for national defence should be effected as might diffuse throughout the nation a sense of security.

On the 18th June the Army of Reserve was embodied: 50,000 Militiamen for England, 10,000 for Ireland, to be raised by ballot and confined to the defence of the United Kingdom, but allowed to volunteer into the Regular Army.

All persons were liable to serve except such as were exempt from the Militia ballot.

Speaking in his place in the House, the Secretary for War expressed the wish that he might live to see the day when the use of the musket would form part of the education of British youth, as that of the bow did in the time of their ancestors.

And, indeed, it appears to most people that if a country, as this does at present, gives a free education to its youth, the Government of that country has a logical right to insist that part of that education shall be instruction in bearing arms for the defence of the country.

The Bill of 18th June was followed by the *levée en masse*, which became law on the 27th July, 1803. The manhood of the country was divided into four classes:—

I. All unmarried men between the age of 17 and 30.
II. All unmarried men between the age of 30 and 50.
III. All married men between 17 and 30, not having more than two children under 10 years.
IV. All under 55 not comprised in first 3 classes.

These were to be trained to the use of arms in their own parishes. (But please note that this training was only to commence two months after war had been declared!!)

In case of invasion they were to co-operate with the Regular Army within the realm, and remain embodied until the enemy was expelled.

This plan was modified afterwards, only the first class being actually trained: as Volunteers from every part of the country, to the

number of 400,000 men (out of a population of 10,000,000), at once came forward to defend their homes.

This formidable proof of patriotic energy doubtless had its effect on Napoleon, who diverted his forces to the Danube, and the fear of invasion ceased.

During the late reign, in 1842, and again in 1859, we trace the scare of invasion to a slight extent; in each case the Militia laws were played with, but the question was generally used against the Government of the day for party purposes.

Last, but not least, we come to the "Fashoda incident," which most people dismiss very lightly, in spite of the fact that France voted a lump sum of 60,000,000 francs for her naval and coast defences. I think, however, that no one will deny that, considering our complications in South Africa, the Government would have looked with more equanimity on that situation had there then existed some such organisation as will be proposed in this lecture.

One fact forces itself on our notice, namely, that whenever this country has been invaded, or has been in actual danger of being invaded, the tendency is to depend on local levies, and local training. In the old days every county was divided into wards, wapentakes, or hundreds—we trace the same tendency in the parish training at the time of the Spanish Armada, again, a hundred years ago—and it is interesting to find it recur in 1859!

Many of you have probably read a delightful book, published by Mr. John Murray lately, called "Some Eighteenth Century Men of Letters." It contains a memoir of the writer, the Rev. Whitwell Elwin. In addition to being editor of the *Quarterly*, and therefore with a thorough grip of the political situation of the day, he was a Norfolk parson. We read that in 1859 it was expected that the French would make an attempt on England in the following spring.

In November, 1859, he writes to a friend: "Our people are preparing with the calm deliberation which is characteristic of the nation. The panic ceased the moment we began to act, and nobody now is disturbed at the project." Mr. Elwin had become an ardent Volunteer himself, and "the great thing," he said, "is to have as many hundreds of thousands as possible who have rifles in their houses, and some knowledge of how to use them.

No enemy would then venture to invade the country. A nation waiting with rifles in their hands is not so tempting an object as a nation rich, confident, and defenceless."

Addressing his neighbours on the Volunteer movement, he tells them that "the first duty of a good citizen is to learn to defend his land, his liberty, his family; and, in my view, the person who declines the task is a traitor to himself, his country, and his household."

These extracts give us a clear notion of the views of a well educated, well-read man of the world on the last occasion that this country was seriously threatened.

There were thousands of such men, then, ready and willing to make themselves efficient for home defence; now there are tens of thousands who only wait a reasonable opportunity.

But, on the other hand, with the increase of the population, the liability to panic has increased in a far higher ratio. Should invasion come in these days, it will be swift, sudden, and unexpected. Rapidity of communication, combined with punctuality of concentration, in

spite of adverse weather, make almost anything possible for the offensive.

"Forewarned is forearmed," but the warning in these days will be a short one. To be "forearmed" is the duty of a country becoming day by day more of a pension-house for thousands whose money has been made, and is invested in foreign parts, and which cannot support its millions on home-grown produce!!

Common-sense compels every sensible Briton to insure his country against danger, whether from internal panic or external foe!

But this brings us to the question, so often threshed, but never threshed out, either in this theatre or elsewhere: Is there any real danger of invasion by a single Power, or a combination of Powers, so long as our Navy is, and does, what we hope and expect?

You have all read the able articles dealing with this subject: "The Cause of European Peace," by Mr. Seely, M.P., in the *National Review;* "National Strategy," in *Blackwood;* "Conscription or Compulsory Volunteering" in the R.U.S.I JOURNAL for January, 1903; also the articles on "The Problem of the Army," which have lately appeared in the *Times.*

But they are none of them conclusive; nor shall we ever arrive at even a sound judgment on this question until we have a Council of Defence, independent of party, to think out the combined strategy of our naval and military forces, and to place their conclusions before their countrymen—who will, then, readily give the power to carry out what is needful.

All such questions are, more or less academic. They may be answered in many ways, but the most usual are:—

Either that the Fleet, as the first line, is able so to protect the country as to make it impossible for an enemy to land a hostile force.

Or that if, in spite of the Fleet, a hostile force does effect a landing, the country must surrender through starvation.

Or that the business of the Fleet is offensive, and in the first instance, to protect our commerce and lines of communication with our colonial dependencies. That the manhood of the country should be organised so as to be able to repel any attempt of a hostile force to land; and that steps should be taken to store food, and supply the population in such an emergency.

In fact, as I said before, the ordinary Briton doesn't trouble his head about such matters. It is very different, however, with those whose profession forces them to consider the question of "home defence," and to follow it to its logical conclusion, namely: If a foreign Power, or a combination of Powers, did make this attempt—Are we safe? Are we ready?

In October, 1901, I found myself in some degree responsible for the defence of the coast-line of the N.E. District, from Berwick-on-Tweed to the Wash.

On my first inspection of the coast defences, what struck one was, not so much the want of preparation as regards the armaments and position of the actual forts, or the composition and training of the mobile columns told off to resist raids; but the difficulty in case of attack, of dealing with the mass of colliers, artisans, and fishermen who form the population, and of guarding the network of rail-

ways which run close to the sea. One felt that unless, in peace-time, steps are taken to organise local guards for these lines, to keep in hand and, if necessary, withdraw the inhabitants from positions exposed to shell-fire to where they can be housed and fed inland—the best-laid military plans would stand a chance of being upset through congestion of the railway traffic, and panic among the civil population.

There is no greater danger to a civilised country, when vigorously attacked, than a large non-combatant population.

One could not help contrasting the situation in this country, from a defensive point of view, with that of the Transvaal, where every district had its commando, and every farm was an observation post. This led to the idea that it would cost little, but be of enormous value, if the "voluntary" commando system could be worked in the coast districts. I mentioned this to Lord Grey, Lord-Lieutenant of Northumberland, who expressed his warm approval, and promised very kindly to assist in any way he could. It is an odd coincidence that at this particular time he found among his great-grandfather's (the first Lord Grey's) papers, who had a command in the South of England, one docketed "Questions and answers relating to a Corps of Guides for the County of Kent," dated 1803—the time of Napoleon's camp at Boulogne.

I wrote, officially, to the G.O.C. N.E.D., saying that, having visited the armament and studied the defence scheme, it had struck me that, owing to the very extended coast-line, it is most improbable that those who would command, or form part of the movable columns, woud have the local knowledge, without which it would be unlikely that they could operate in any district with confidence, celerity, and ability to chose the best positions and routes for troops and guns.

I asked permission to divide the coast-line into sections and hinterlands, and that I might request certain residents in each to enrol themselves as "Guides" for their own section, to be attached (in such numbers as are necessary) to the staff of any body of troops operating in that section, whether in war or peace.

The G.O.C. acceded to this request; he also asked me to undertake the matter.

Here the difficulty began; being a stranger to the North of England, it was not easy to pitch on the people at once who would take the trouble to select and approach the right sort of persons to become "Chief Guides." The whole success of the scheme depends on this selection; they must be residents, men of initiative, and able and willing to choose and attract the best "District" and "Parish" Guides.

The circular letter, Appendix A, was sent out to Lords-Lieutenant.

For a long time, except in Northumberland, little progress was made; but in that county the names of several most valuable "Chief Guides" were registered at once. I should like to read you an extract from a letter, dated 18th January, 1902, from the first appointed "Chief Guide," Mr. George Grey," who knows every inch of the Cheviot country:—

"I will be very glad to serve as a Chief Guide, or in any capacity where I can be useful. I do not think County Council districts the best division. I think the following would be a better and more workable scheme:—Appoint a Chief Guide for each *Ward*; then appoint a certain number—say two Guides, in the first instance—for

each ecclesiastical parish in that ward. You would have a more uniform service, and would only have need to communicate orders to one person, who would be responsible for all Guides in his ward. . . I would not proceed to multiply them until they had had, say, six months in which the Chief Guide, or possibly someone sent for a day, had instilled into them some knowledge of their duties, and also taught them, one and all, every nook and corner of the whole ward. For instance, I should summon them to meet me at Hethpool, say, and should name one of them to lead the way over the hills, ten or fourteen miles, into Ingram Valley, and so down to the main North Road; or over the hills for 16 miles into Alwinton, and strike the main West Road above Rothbury. I would myself check any wrong route, or route by which artillery could not pass, and make them observe the various aspects of the ground, etc. I would gradually get the bulk of them conversant with the country; but I should not rest content with that. I would go on further and make them do it at night, when darkness alters so much every daylight-conceived notion. If, after that, I could get them to do it in a fog, all the better; but only one or two would come through that ordeal.

If you do as you suggest—appoint a Chief Guide for each Council District, you will have a number of men knowing, to be sure, their own little bit, but quite ignorant of anything six or ten miles from it. I may be wrong, and you must be the judge, and whatever is decided upon I will willingly carry out, so don't mind my suggestions."

Of course, such keenness is hardly to be expected in every case, though I believe it would give an additional interest to many men when hunting, bicycling, motoring, or walking about their own country, if they remembered they might have to guide troops, or describe positions.

In other counties, however, there was not so much initiative. Yet, having once asked the Lords-Lieutenant to be so kind as to take the thing in hand, it was impossible to move in any other way—Sir Reginald Thynne had left the district, and matters were at a standstill, when I had the good fortune to mention my scheme to Lord Ebrington, who, as you know, is Colonel of Yeomanry and late Master of Hounds, in Devonshire.

He at once began, on his own account, to register guides in that county. He drew up three circulars (see Appendices B, C, and D), which he showed to me, and I thought them so practical that I not only had them copied, but when I sent them out they had the most stimulating effect. I have had many of the blue papers signed, and the last one I got in had 25 names on the back.

At present, I am only asking for chief guides, and only working the country between the main N.E. line and the coast.

Lord Ripon has nominated a committee to work the scheme in the N. Riding of Yorkshire, and I hear from County Durham that "chief guides" have consented to act in 20 out of 25 County Council divisions, owing to the energy of Mr. John Trotter, clerk to the lieutenancy.

Many questions still require to be settled.

1. Whether to take County Council, Petty Sessional, or parish divisions as the unit.
2. The number of district and parish guides to be registered in each

3. How far their voluntary services should be requested during staff rides and manœuvres.
4. Whether a similar organisation should be extended to the boroughs.

But, I fear, so far as the North of England is concerned, no permanent decision can be arrived at on these, and many other important points, until a commander and staff have been appointed to what is officially designated the Vth Army Corps.

This last question of the boroughs is full of interest. Many of the towns on the N.E. coast are exposed to fire from cruisers, and possible attack by torpedo-boats. At present, so far as I know, we have no organisation to prevent panic, or to move the population from exposed positions, and to house and feed them in safety. Hartlepool is an ideal place from a defensive point of view; it has an excellent modern armament, which is entirely and efficiently manned by the Volunteers of the town itself. Would that all the coast towns could say the same. But the batteries are actually contiguous to the houses in the streets, and, if they were attacked, the enemy's shells would cause great damage to life and property. I asked Colonel Lauder, of the Artillery Volunteers, to go quite privately and unofficially into this matter with the mayors of the two towns. It was unofficially decided that in case of threatened attack, the aldermen and councillors would take charge of the wards which they represent, put themselves in communication with the N.E. Railway Company, as to the running of special trains, and seeing to the inhabitants being removed to the towns of Stockton, Thornaby, and Middlesborough, a distance of 10 to 12 miles, where accommodation and food could readily be had. I cannot but believe that if the local commando system was extended to the towns on the coast, and worked through the town authorities, each ward in each town would contribute its quota to the town guard, with their known duties and alarm posts, and that there would be calmness and security, instead of panic and danger!

As I said before, if Government give free education, surely they have a right to say that part of the education shall be education in bearing arms for local defence. If this was begun in the schools, in a very few years every town might have an efficient town guard—with medical, ambulance, transport, railway, and engineer companies. It is not a matter of expense, it is purely one of organisation—such as obtains in every village in France and Germany. It would also give a new interest to the inhabitants, and increase their self-respect. We have got the local machinery, why not use it for national defence?

The only expense necessary would be local rifle ranges, and a bonus to each "guide" or "town guard" who passes in marksmanship.

Each Borough and County Council division might be given so many stand of arms, which would be of value both for training in peace and use in war.

Local levies could guard the railways in war time.

Kimberley, Mafeking, and other towns, amply prove what assistance civilians can supply to a small body of formed troops efficiently commanded.

In this way, without working a railway or other transport, wherever a commanding officer of a formed body found himself, he would be joined by the best local men to supply information, to

guide detached parties or transport, and to carry messages on horseback, by bicycle, or motor-car. This means a great deal in a country so intricate as ours. It was this system alone which made the Boer resistance possible. They had the most perfect intelligence department. There was not a district in the Transvaal or Orange River Colony which was not under a local commandant, who maintained a system of observation posts throughout the length and breadth of his district, and who had the means of conveying to some central organisation, early intelligence of the movement of every British column.

This was the manner in which they utilised their less valuable fighting material.

If commanders of army corps are given real decentralisation, and are able to act on their own initiative, there is no reason why the defence of the country should not be really localised in a few years time. Every gun with a trained detachment of local men, hundreds of thousands of the best manhood of the country enrolled as "guides" or "town guards." Such a body, in conjunction with a sound system of local rifle clubs, and affiliated to the cadres of local corps, would be a valuable addition to our forces if called on to "mobilise" for home defence.

What we ought to do is to enlarge the possibilities for men to receive military training without enlisting in the Army.

If the country should be in danger, every man will be glad to fight for it, but unless he has learnt to shoot and understand orders he will be of no use. I believe there are hundreds of thousands who are able and willing to learn enough to make them most valuable defenders of their country, and if some scheme, such as I have ventured to put before you is run, by the best men with the best staffs, without red tape, but with common-sense and tact, there is no reason the country should not realise Lord Salisbury's ideal when he said:—

"If once the feeling can be propagated abroad that it is the duty of every able Englishman to make himself competent to meet an invading enemy, if ever, God forefend! in the course of time an invading enemy appear: if you once impress upon him that the defence of the country is not the business of the War Office, or of the Government, but the business of the people themselves, learning in their own parishes the practice and the accomplishment which are necessary to make them formidable in the field, you will then have a defensive force which will not only repel the assailant if he comes, but which will make the chances of that assailant so bad that no assailant will ever appear."

APPENDIX A.

"HEAD QUARTER OFFICE,
YORK.

December, 1901.

I have lately had the honour to take over the command of the Royal Artillery in the N.E. District. In the journeys I have made,

inspecting coast defences, outlying districts, and so forth, I have been much struck by the fact that enormous difficulties would be encountered in many districts along the coast, and in hilly country, in moving guns, finding positions and approaches thereto, &c., &c., owing to the want of detailed local knowledge.

The long coast line, which bounds the N.E. District, is, in many places, remote from railways and little frequented. In all probability, the Officers and Men of mobile columns, operating in such parts of your County, would have little more local knowledge than a foreigner. The same applies to the mountainous districts of Northumberland and Yorkshire.

Sir E. Grey, in the House of Commons, just a fortnight ago, quoted a German, who said:—'In Germany, all officers are given certain areas of this country to study in detail. For instance, I have had to do Yorkshire. Ask me any question you like about the country, and I can answer you, such as how many smiths' forges there are, and how everyone is situated.' Talking of foreigners, is there any responsible official who could tell us the number and nationality of the foreigners living in England to-day?

I have the honour, therefore, with the approval of the General Officer Commanding N.E. District, to submit to your notice a scheme, which I have initiated, for seeking out and registering, in every small section of your County, the names of residents who may be willing to act as 'Guides' to H.M. Forces, in the event of manœuvres being held on a grand scale in their districts. It is needless to say that the services of such a body of men would be invaluable in the case of this Country being threatened by a Foreign Power.

Considering the number of adult males in your County I feel convinced that there are many who, though prevented by divers reasons from joining the Yeomanry or Volunteers, would gladly avail themselves of the opportunity of serving their Country as 'Guides' for ————————, and it is hoped that a certain number of resident land-owners, land-agents, farmers, huntsmen, whippers-in, keepers, bicyclists, and fishermen, in each sub-division of the County, may be induced to do so.

Such men, in such numbers as are necessary, would be selected to join the staff of any body of H.M. Troops when operating in their own locality. They would act (i) As Guides: to show the shortest and best routes; artillery positions and the approaches thereto; hidden lines of advance, &c., &c.; and to watch possible landing places. (ii.) As Despatch Riders. (iii.) As Guides to, and in charge of, local civilian transport.

They would live in their own homes, and be liable to no military service except when acting as 'Guides.'

It would be a very great assistance if you would be so good as to take any steps as may appear expedient to you in order to enable this scheme to be carried into effect.

Enquiries to be addressed to

Col. W. L. Davidson, C.B.,
Commanding R.A., N.E. District, York."

APPENDIX B.

"*From* .....

To .....

DEAR SIR,

May I ask you to read the enclosed papers as to the formation of a Corps of Guides for this District. Though you may be unable to join the Auxiliary Forces, your assistance would be invaluable for Home Defence in case of threatened invasion.

So I greatly hope that you will be kind enough to help this movement by registering your name; in that case please fill up the blue paper and return to me in the envelope sent herewith.

The questions you are asked to answer are not put out of idle curiosity, but if the Register is to be of value to those who may at any time have to use it, it is necessary it should contain some information about the Guides, or an elderly man might be asked to undertake a long distance ride with a Cavalry Patrol when a young one with equal knowledge was available, or a man who could neither ride nor 'bike' might be told off as Pilot to a party of Cyclists.

I should be much obliged by the names of any persons you can give me likely to join the Corps and capable of doing good service.

Yours faithfully,

_____."

APPENDIX C.

"It is desired to form a Corps of Guides for the District of

.....

In the event of invasion, Officers and Men of the Yeomanry might be employed in Districts and Parishes other than those with which they are familiar.

Troops might also be sent down to protect the coast who have had no previous acquaintance with this part of the country.

The object, therefore, is to have a register of the names of persons who know the country well, and who would be willing, in case of emergency, to put their local knowledge at the service of the Troops, who would give Officers and Men the information as to bridle-paths, gates in boundary fences, crossing-places, fords, watering-places, and the like, which the best of maps do not offer, and who would guide large or small parties from place to place on horse or foot or on bicycles.

Persons who join the Corps of Guides will undertake no liability; they will not be bound for any term of service, or in any way whatever. All they have to do is to pursue their usual vocations till the necessity for their services occurs.

But should such emergency ever unfortunately arise, the Military Authorities, instead of having to enquire who will help them, will only have to refer to the Register of Guides to see who can do so, and to what extent.

THE GUIDES WILL BE ORGANISED AS:—

(1) Chief Guides.

As such the following would be valuable:—Hunting gentlemen, land owners, land agents, in a large way of business, who know both the roads and the bye-roads, woods, etc., over a large extent of country.

(2) District Guides.

Men like the foregoing, only of less wide knowledge; estate bailiffs, relieving officers, school attendance officers, registration agents, sanitary inspectors, road surveyors; also members of cycling clubs, leaders of stallions, medical men, veterinary surgeons, etc.

(3) Parish Guides.

Clergymen, estate bailiffs, farmers, game-keepers, rabbit trappers, rate collectors, fishermen, shepherds.

Beyond giving in their names, all that members of the Corps of Guides will be asked to do will be to answer some questions as to their qualifications, and to fill up once a year a post card saying if their address remains the same."

APPENDIX D (or Blue Paper).

"CORPS OF GUIDES.

In the event of National Emergency I am willing to put my local knowledge at the service of the Military, and I desire that my name may be Registered as a Guide accordingly.

I do this on the understanding that except in the case of actual or apprehended invasion no one has any claim upon me, and that at any time previous I can remove my name from the Register, by giving notice in writing to that effect to the Officer Commanding.

Name..... *Date*.....

---

(1) *Occupation* .....

(2) *Address for Letters* .....

.....

(3) *Nearest Telegraph Office and Distance* .....

.....

(4) *Year of Birth* .....

(5) *State if you ever served in any branch of His Majesty's Forces; and if so, what Rank you held when you left.....*

(6) *Do you Ride?*
(a) *Habitually.....*(b) *Only a little.....*(c) *Not at all.....*

(7) *Do you Bicycle?*
(a) *Habitually.....*(b) *Only a little.....*(c) *Not at all.....*

(8) *Do you use a Rifle?*
(a) *Habitually.....*(b) *Only a little.....*(c) *Not at all.....*

(9) *Give the names, in alphabetical order, of the Parishes in which you know the Roads.*

(10 *In which of these do you also know the Woods and Bye-paths.*

(11) *Kindly write on the back the names and addressess of any person in your neighbourhood whom you would recommend me to invite to join the Corps of Guides."*

General Sir A. P. PALMER, G.C.B., G.C.I.E. (Indian Army):—I cannot help responding to the call of the Chairman, taking the keenest interest as I do in everthing that can induce to strengthen our little island, especially as the subject for discussion to-day concerns our nationel defence. I have been present at the debates in Parliament during the last month, and have listened with the greatest interest to the gratuitous advice given to the Secretary of State for War from the members below the gangway, or the "mosquitoes," as they have lately been styled. I think it is very valuable that lectures like the one we have had the pleasure of hearing this afternoon by a keen officer like Colonel Davidson, should be given before the cold fits set in, which I am afraid is so often the case after a war has been concluded. While the war is on, as an excellent cartoon in *Punch* showed the other day, John Bull cannot have too big a war dog, but when the war is over John Bull says he cannot afford to keep so large an animal. The lecture, I think, is a most valuable and a very suggestive one, but I cannot help thinking that the suggestions, valuable as they are, will be without effect unless some officer is appointed to carry out the lecturer's ideas. I do not believe in suggestions being sent round to general officers commanding army corps; suggestions are liable to be received and "filed in the office," and we do not hear much more about them: perhaps some general officer takes it up occasionally, but the others take no interest in it. My own experience is that if you want to do anything of the kind you need a sort of Inspector-General of Scouts or Guides. That officer would exchange views with the military authorities, the Secretary of State for War, and the Commander-in-Chief, and see how far the Government are prepared to go. Then, being strengthened and empowered to act, he could go round and personally visit all our coast defences and important military centres, and put in training the system which Colonel Davidson has so ably advocated. I am sure that a scheme something like the one which he has suggested is necessary, and is likely to be successful. I dare say we all remember that in the Franco-Prussian war the French were so sure that they would invade Germany that they possessed most excellent maps of that country. But as the tide turned, and they were invaded, they had no maps of France, and did not know the way about their own country. I hope the time will never come when England will be invaded, for it would be a very bad thing if such a thing were repeated in our case,

and instead of knowing our way about, we were groping in the dark. Such a system as Colonel Davidson has advocated, I am sure, would be most useful, but its success depends upon its being worked out and "worried through" by an officer who is an enthusiast, and has the safety of his country at heart.

Admiral Sir N. Bowden-Smith, K.C.B. :—I welcome Colonel Davidson's paper because it is a step in the right direction. It is an appeal to our fellow countrymen who are not in the Service, or who have retired, to take some part in the defence of their country, if required to do so. I would go a step further; I would like to see the Government of the day empowered to call upon the manhood of the nation between certain ages to defend their country if necessary, and to compel those who are thus available, or a certain proportion of them, between the ages of 18 and 22, to go through a few weeks' instruction every year for three consecutive years, and taught how to shoot. It is for this purpose, and to encourage a feeling of national service, that an association was formed last year called the National Service League, of which I happen to be a member. We do not advocate conscription such as is known on the Continent. We think, with an Empire like ours, where so much foreign service is necessary, that the Army and the Navy must be manned by voluntary recruits as at present, but behind those Regular forces there is no reason why there should not be a citizen army, prepared to resist a raid or an invasion, and from which might be evolved a Reserve for the Navy as well as for the Army. It is very doubtful, in my opinion, if the country will stand the enormous estimates which are now being proposed. I am much afraid there will be a great swing back of the pendulum, and that a reaction may set in to an undue economy. The remedy is to somewhat reduce our Regular forces and largely increase our Reserves. The reader of the paper has alluded to the question of invasion. Such a thing is very improbable, but with a strong naval combination against us I do not think it is impossible, and therefore it is a matter that must be considered. If invasion is improbable, a raid is not so, and the amount of mischief that one single cruiser, landing a force of men with plenty of dynamite, could do in one of our undefended ports full of shipping would be incalculable if we had not men on shore with rifles and light guns to beat them off and defend the place; especially as it is by no means certain that our Channel and Home Fleets might not be called away to fight a battle off Gibraltar, or in the Mediterranean; they could not always be prowling about our coast, I take it, in war time. I believe invasion or raiding is easier now than it was in the days of sailing ships, and we cannot ignore the fact that our possible enemies are well provided with plenty of steam transport. Their naval bases are very near; Cherbourg is opposite us, and the German naval port of Wilhelmshaven, on the North Sea, is only 30 hours' steam from our shores. If an invasion is absolutely impossible, why do so many foreign writers discuss it? During the last two or three years many papers and pamphlets have been written on the subject, showing that some people do not think it impossible. I believe a moderate system of compulsory service would be a good thing for the country in the way I have described. It would tend to assist recruiting; it would tend to improve the physique of our people, especially the young men and lads who live in crowded cities and who work in mines and factories; I believe it would tend to assist education, if we carried out the German plan and enacted that those who pass a certain standard should have less time

under training. It would improve the general education of the people and so make us better able to cope with that great commercial competition with which we are threatened by very highly educated nations, such as Germany and the United States. I believe, moreover, that it would tend to counteract to a certain extent that spirit of hooliganism that is somewhat rampant in our midst; and it would also tend to bring classes together. Of course there are persons who say that it is of no use to talk about such a scheme, because the people will not have it. It is a very common thing to say, but I do not know that the people have been asked yet. We are compelled to register our children's births, we are compelled to make our children go to school, and we are compelled to pay rates and taxes; but there are two things the free-born Briton must not be asked to do: he must not be compelled to be vaccinated, nor asked to fight for his country, unless he chooses to do so. Von Moltke and the Franco-German war have been mentioned—von Moltke by the lecturer, and the Franco-German war by the distinguished general who has just spoken. In the year 1870 that great German soldier and statesman was living at home at his country seat never expecting, I imagine, to serve again, as he was 70 years old. He had lost his wife a year or two before; and, having no children, a widowed sister and her family were living with him. A telegram came from Berlin requesting him, owing to the imminence of war with France, to go immediately and take command of the German Army as Chief of the General Staff. He took the telegram, and thrusting it into his pocket, muttered, "Well, we are prepared." The Franco-German war took place; the Germans were prepared, and the French were not, and you all know the result. In the *United Service Magazine* for last November or December, I forget which, there was an article by Lord Monkswell on the recruiting question. I do not know why he wrote it. It appears to me he thought that some of the superior officers of the Army were advocating conscription, and I think it was written against that system. He used the usual stock arguments that anything like compulsory service was impossible in our country because people would not have it, and this wonderful sentence occurs in the latter part of his article. He says: "No, let them understand"—that is, I suppose, the officers of the Army—"that nothing short of a great national disaster will ever reconcile the people of England to compulsory service." What the National Service League, and I suppose the lecturer, and I hope you, Sir, want to avoid is a great national disaster. It is no use making our preparations after the disaster has happened. I will conclude by asking the audience here whether it is better to be prepared, as Germany was in 1870, or to go on drifting until disaster overtakes us and we find ourselves badly on the rocks.

Lieut.-Colonel A. P. Humphry (late Cambridge University V.R.C.):—I think there is an organisation existing in England, which was only briefly touched upon by the lecturer, which might be made of very powerful use in this matter—I allude to the organisation which exists throughout England of the County Councils. There is a great deal that the County Councils can do, with the advantage that they exist already and would not require fresh organisation. Acting through a committee, which is the usual way in which County Councils do their business, they can find out a great deal of information which, so far as I know, does not exist at present. For instance, they have the knowledge of the county surveyors at their disposal. If there is a necessity to know all about the roads and bridges,

and how they can be used or destroyed, the County Council surveyor would be the man to go to. They can ascertain, with a certain amount of trouble, how many carts and horses exist in the district on the several farms, and how many could be available at short notice. They could also find out a great deal about the stores of flour and grain which exist in the different parts of the county. If they collected information of this kind, and no doubt of other kinds, which could be prescribed for them by the military authorities, there would be an immense mass of material existing in the way of information which would be of the most enormous importance at a pinch, but which could not be collected together in time to resist a sudden invasion. There is also a moral advantage in the use of the County Councils which I think would not be without importance, namely, that if the people saw their own County Councils taking up this matter, and working at it steadily, it would do an immense deal to bring home to the people themselves the duty that each man owes of being of some assistance in the defence of his country.

Colonel Viscount EBRINGTON (Royal North Devon Hussars, Imperial Yeomanry) :—When I came here to listen to this lecture I did not know I should be called upon to speak. I think both you, Sir, and Colonel Davidson, have exaggerated the importance of the little I have done in the matter. Colonel Davidson mentioned to me what he was doing in Yorkshire, and it certainly struck me as a very good scheme, and I thought, as Commander of the North Devon Yeomanry, it would not be a bad thing if I was to see what could be done in that way in our own district, which covers the whole of the coast-line from Somerset to Cornwall, with the few parishes besides, both in Somersetshire and Cornwall. I, therefore, sent out the circulars which he has done me the honour of re-printing in his paper. Colonel Davidson has told you that I have, with very little trouble, had near 200 responses. I have not had time to sort them out properly yet, but I have gone as far as this—I have two or three men in every parish all round the coast who know their own parish thoroughly, and something about the adjoining ones, and I have a number of men who know large areas extending over the whole of the country in which we are authorised to recruit. The best people for the purpose, I think, are hunting people, because they get to know an enormous lot of country one way and another, and know it "from the inside." They know all the crossing places, and the easiest way of getting about. Devonshire, as some of you are aware, is a county of small fields, very strongly enclosed, and very hilly, and there are a number of bridle paths by which a man who knows his way about can go for 20 miles without going hardly a quarter of a mile at any period on a frequented road. I got a good many people of that sort to give me their names. I have not done more yet than to collect the names together and tabulate the results, so as to have them ready to be properly classified and put on a proper system. I do not know whether it would be left to me to do that, or whether the military authorities might take up the scheme and work it out themselves. I think Sir Evelyn Wood has some ideas on the subject in the district of his Army Corps. It would certainly be necessary, if the thing is to be done thoroughly, that the suggestion made by the distinguished officer who opened the discussion should be acted upon, and that some officer should be put in charge of the arrangements for providing a corps of guides. I doubt if country people, or people like myself, have either the time or the experience necessary to work the thing out properly. There are lots of retired officers in the country, men who have been in command of cavalry

regiments, and people of that sort, who have not a great deal to do, who would be very glad to take up work of that kind, and would be able to do it well. I think it is expecting a good deal of the ordinary person or rabbit-trapper to call on him to show an artillery officer a good artillery position; but at any rate they would be able to tell any officer that they could see, say, 6 miles due north from Beacon Hill, but that the view was shut off from the north-east so that it is only possible to see 2 miles or less in that direction; and the information and help they would be able to give in such matters might be of great assistance. I quite agree with Lieut.-Colonel Humphry that County Councils might be of very great use, and I have very little doubt that, if properly approached, they would be ready to give any help in their power. The new Education Act puts a great deal of extra work on County Councils and on their Committees, but still I think people could be found who would help in giving information. As far as my small experience goes, which, of course, is limited to one corner of one county, I think public officials like road surveyors and the like, would also be very ready to help. But, in my opinion, the most useful people for the purpose desired are the hunting people, sporting farmers, veterinary surgeons, and sanitary inspectors, because they are the people who do not stick to the roads or wheels. Veterinary surgeons, in our parts at any rate, go about a great deal on horseback and get to know bye-ways, paths through woods, and things of that sort, which people who go about on wheels or on bicycles never know or hear of. The only disappointment I have had at all in the attempts I have made has been that bicycling clubs do not seem to take any interest in the scheme at all. I only received an answer from one or two of them, and one man who wrote wanted to know what the remuneration would be. I was not in a position to make him any offer in that respect, so our correspondence came to an abrupt conclusion. I think that is all I can tell the meeting; but so far as my experience goes the scheme is very hopeful, and, if the thing is properly taken up, it ought to be brought to a very good conclusion.

Lieut.-Colonel C. H. Tippet (4th Bn. Royal Dublin Fusiliers):—It seems to me that we are under a debt of gratitude to the author for the very practical proposals he makes as to forming a corps of guides, or a system of guides throughout the length and breadth of our country. I was very much struck by the remarks of the distinguished general, who recently returned from India, with regard to the position of the French at the time the Germans invaded France. Being one of those who some years ago studied the Franco-German war, I was greatly impressed by the fact that the French knew absolutely nothing about their own country. I should be very sorry to suggest that in case of an invasion of this country, which although improbable is not impossible, we should know nothing about our own country; but it does seem to me, without some practical scheme such as that proposed by Colonel Davidson, if by any unforeseen chance a foreign force should be landed on our shores in any part of the country, we should find ourselves in very much the same position that the French found themselves in when they were suddenly overwhelmed by one of the finest organised armies which ever followed a brilliant general. I think, Sir, that if the result of this discussion is that the counties of England and the authorities in England decide that some system of guides, such as that suggested, is carried into effect, the people in all parts of the country will only be too ready and willing to assist in every possible way. If that is done, we shall then find ourselves, in case

of foreign invasion, able to roll back the enemy at the first opportunity without having to organise under high pressure, at a time of great excitement, and we shall be ready to sweep away any small forces which might be landed on these shores. Seeing what strikes me as being the blind optimism of the British people, and the same over-confidence with which we entered into the late war existing still at the present moment, I think it is our duty, those of us who take the trouble to think over these matters, to do all in our power to bring before the public of this country the imperative duty of being thoroughly organised to meet any possible invasion which might ever happen at any future time.

Mr. J. St. Loe Strachey :—We have listened with great interest to the very able paper which Colonel Davidson has laid before us. Naturally, when I heard the words "rifle club" I was excited and interested, because I hoped the lecturer would be able to suggest some means by which the rifle club movement could be connected with the guide movement, but probably for reasons of time and space he was not able to make any practical suggestion of the kind. My feeling about the matter is that if we could connect the rifle club movement with the guide movement we should give both the guides and the rifle clubs a great impetus. Here I may mention a practical point of some importance, namely, that I do not think we need be the least bit afraid of asking people in villages and people in quite humble circumstances to join a guides corps. I think we shall find, as I have found in my experience of rifle clubs, that movements of the kind among civilians are extremely popular, and that you need not be afraid of asking the guides or the people who belong to rifle clubs to work for you. They will be only too glad to do so. If I shall not be trespassing too much on the time of the meeting, I should like to speak of a little practical experiment of my own in regard to that. I am connected with four rifle clubs in Surrey. These four clubs are all within three miles from my house, on the top of the Downs, at Newlands Corner. I thought, after we had had a year's practice with the rifle, and had more or less got ourselves into shape as riflemen, it would be a good thing to see if we could not turn out our members and have a field day on a small scale. A good many people told me that the experiment would be a very difficult one, and that our riflemen would not care to give up the whole of a Saturday afternoon to devote to such a thing as a field day. However, we thought we would try and see what we could do; and when we mobilised the rifle clubs, to our great satisfaction about 200 men turned up. The object of the rendezvous was to defend the hillside at Newlands Corner, which is on the line of Downs which stretch between Dorking and Guildford, and about four miles from Guildford. We were to defend the hill-top which was to be attacked by a body of Volunteer cyclists belonging to the 1st Hampshire Volunteers—a regiment which, I believe I am right in saying, is one of the best and efficient Volunteer battalions in the kingdom. We had an extremely interesting day. We were not left entirely to ourselves as a body of untrained civilians, because two officers, who had seen a good deal of service in South Africa, took command of us and showed us what to do. We were very anxious to know what these officers with a practical knowledge of war thought of our value, and I am glad to say that both of them gave it as their opinion that the men we turned out would have been a great deal of use in an actual military operation. Of course, the experiment was on a very small scale—there were only 200 of us—but they were all men that could shoot, and they were also all men who knew the country well. For instance, a Volunteer officer we had with us said to me

afterwards, "When I was posting my section on one side of the hill, I said to the man next to me, 'Is there anybody who knows this part of the country?' and the man replied, 'I ought to, sir, considering I have been game-keeper on this beat for 10 years.'" Another thing we realised was the great help we obtained from the intelligence of the men. The officer in chief command of our riflemen told me that one of the things that struck him most was the extremely good way in which he was kept informed throughout the day. He praised the regular and systematic way in which the information was supplied to him, and the keenness and intelligence of observation amongst the men. In fact, I think our experience was altogether a distinctly useful one, and showed that if you mobilised the rifle clubs in a district, or ordered a rendezvous of riflemen of the kind we organised, they would not be a mere mob of civilians "happening to have arms in their hands," but would be a body of men of whom trained officers could make a considerable amount of use. They were not only quite amenable to discipline, but executed all orders given to them cheerfully and quickly, and gave what I may call a co-operative obedience. When they were told to do a thing, they at once understood what they had to do, and backed up the man who had given the order to the very best of their ability. Mine was, I think, the first experiment ever tried in getting members of rifle clubs to take part in a field day. Curiously enough, instead of being distasteful to the men, or of their being tired of it, I have received a great many requests, not only from the members of the clubs that went out, but from members of other clubs in Surrey, who ask to be allowed, the next time we hold manœuvres of the sort, to take part in them. The manœuvres were certainly very popular, although a good many of the men had to give up cricket matches, and the numerous other things that people do on a fine Saturday afternoon in summer. As far as I can make out, the attraction of the military manœuvres was quite as great, if not greater, than that of the other summer sports. On the next August Bank Holiday, we hope to organise something on a larger scale, and not only intend to take up a position, but are going to try and see whether we cannot act as a mobile force. We are going to get a certain number of our members to come mounted on horses, but everyone will have either to be on a horse or a bicycle, or have a seat in a light trap. That is, everyone will be in a position to cover eight or nine miles in the hour. This mobility will enable us to show whether we cannot move rapidly across country as well as defend our own hillside. If you were to have a really sound organisation throughout the country, like the Guides' Association, it would be of immense help, because then there would be somebody whose duty it would be to call out the rifle clubs, to post them, and lead them, and to keep them together. That makes me feel that there is a very great deal in what General Palmer says as to entrusting a particular officer with the duty of looking after the guides. It is a duty which needs to be concentrated. You want it to be not everybody's business, which is nobody's business, but the business of some actual individual, who will be responsible for the scouts, who will learn to know his type of man, and be able to appeal to them. We have a very good name ready for such an officer. It will be within the recollection of many people here that in all Cromwell's Armies there was an officer who was called the Scout Master, who organised the scouts throughout the Army. If in every county we could have a Scout Master, acting in consultation, say, with the Chairman of the County Council, as well as the Lord-Lieutenant, or with a committee of the County Council, we should soon be able to get a very effective organisation for the purpose that we

require. To go back, what I think we really want is not merely a guide organisation, but, as Colonel Davidson suggested at the end of his paper, an organisation of the *levée en masse;* that is, we want some plan for utilising for the defence of the country, the willing and able part of the civilian population. I am sure it has been of enormous interest to us all to hear what Colonel Davidson and Lord Ebrington have already done. It is only to be hoped that the same thing will be taken up in every county all over England, until we see a force of perhaps a couple of hundred thousand men organised as guides throughout England and Scotland.

Major-General C. E. Webber, C.B., *p.s.c.*, late R.E. :—Sir, it would not be fair of me to take up the time of the meeting of this Institution, because I have in the last few years, on three occasions, enlarged on the very subject of which the paper that has been brought up to-day forms a part. In my papers I have dealt with the wider aspects of the subject, as affecting the organisation of the whole nation in time of peace, and preparing every male in the country, between certain ages, to take some part in the defence of the country. There is one point to which our able lecturer has alluded to which I should like to refer. I hope I did not misunderstand him, but I believe he said that "*unless every male who assists in the defence of the country*" (or it may be that he referred only to the scouts) "*learns to shoot he will be of no use.*" That is a doctrine which is to be met with in many of our newspapers, which emanates from all our irresponsible advisers, and which I believe to be one of the most dangerous that, in these modern times, can be driven into the heads of our people. If there is anything that I have strongly advocated, it is—I may be wrong, but I have given very good reasons for it—that the man who uses the modern rifle, to be efficient, should be a man who is understood to use as complicated and as scientific an instrument as, say, the theodolite, or any similar scientific instrument. I wish people could realise this, and see that the putting of modern fire-arms into the hands of every individual, and the teaching him to fire them off, is simply folly. To go on emphasising the *arming* of every individual is simply to create a serious source of danger. I do not think many people have realised the difference between drilling a man in what is called physical drill, the A B C of discipline, and teaching him to use weapons with which he may hit an enemy at 1,000 yards if it is fired from the shoulder, or at 10,000 yards if it is fired from wheels. If you let people think that a man can be taught to do that easily, and apply it tactically, you are only doing what will paralyse you in future warfare, and following a policy which will inevitably end in the failure of the country that adopts it. A few men who can shoot well are worth any number who can shoot indifferently. We have not, in addition, the means for equipping and training tactically the enormous number of men into whose hands Mr. Shee and the National Service League would put rifles—7,000,000 men, I think. Colonel Davidson has said that unless a man has a rifle in his hands he is of no use. In this room, a fortnight ago, I described to you how you can employ 3,000,000 in this country without rifles to assist in the defence of the country, and I believe I included something like 20,0000 or 30,000 scouts or "guides," the very men you want. I doubt if the usefulness of a scout is improved by his carrying a rifle. I think I stated that each electoral district of the country would be called on, under my scheme, to supply four or five guides. Naturally, you would employ as guides the men of intelligence who know the country. I had hoped to have heard something about the use of maps. To many, the assistance of the 6-inch

Ordnance Map is more effective than that of any scout. I would ask Colonel Davidson, if possible, to disclaim the sentence he has put in his paper, namely, "Unless the man learns to shoot he will be of no use."

T. Miller Maguire, Esq., LL.D., Barrister-at-Law :—Sir, I cannot well refuse to respond to your call, especially as, like everybody else in the room, I was extremely interested and edified by the opening address of the lecturer, a distinguished Artillery officer, whom, I think, I met in divers games and exercises a very considerable number of years ago in the sister island. I have spoken so often about this matter of the necessity of being prepared for war in peace time, and the folly of not having a good system of organisation, in order that we may be ready for the most serious possible accident in the life of a nation, that I am afraid I should bore the audience if I repeat my arguments, which are precisely the same as my friend on the left, General Webber, has set forth—that it is a marvel that any man, with the experience of the Franco-German war before him, with the experience of the Crimea in his memory, with the disaster to Austria in his memory, and with the fall of China in his memory, and the fact that the United States were for four years wasting their resources in suppressing a rebellion, at an expense of 1,000 millions of money and 300,000 dead, which might have been closed in six months—does not take an interest in this question. It is an inexplicable thing that the ruling classes in this country, Members of Parliament, and people who ought to be the leaders of our race, cannot be persuaded to take any practical interest in this subject, and how it is that they do not, I have never been able to understand. I think the military life of the nation is of such historic interest, personal interest, vital and practical interest, that it implies the quintessence of stupidity to ignore it, not to speak of the danger of being caught napping again. The gallant Colonel has said, what we have said over and over again, that even if there was never to be an invasion, most of our people of our towns have fallen into a degenerate state. It is painfully obvious to anyone who goes out into the streets of Glasgow on a Saturday night, or who walks through the streets of a Lancashire town, or goes to any locality where working people congregate, such as Westminster (which is contiguous to our splendid Guardsmen's barracks), that the state of the men of the population is becoming so steadily decadent that some remedy must be adopted if they are not to fall into the condition of a yahoo—so that the very horses in the streets will laugh at them. You must adopt some course, some system—I don't care much what system. You cannot have all the people trained at the same time on a Saturday afternoon to play cricket or football, and by being spectators only they are simply wasting their time, and furthering the degeneracy of the race. But if you put rifles into their hands, or some instrument of military training, and they obtain some healthy exercise, it would be of immense advantage to the country. My gallant friend suggests blackthorns. I have seen most effective execution, both from a civil and a military point of view, with a machine of that kind. A good stick will do, teaching them to walk would do, teaching them to observe would do, teaching them to draw a map, if they had any skill in them, teaching them how to observe or report on the aspects of nature. My gallant friend, Colonel Sitwell, says that in Africa disaster frequently resulted from the fact that men sent out from England were lacking in the ordinary faculty of observation. A man who could jump on and off a wooden horse, and was trained on a Saturday to some extent to observe the streams and woods would have been

infinitely superior to send out to South Africa than a person whose ordinary mode of progression was slouching along the street until he got 5s. a day to become a yeoman, a man who could neither mount nor dismount, nor ride a horse. The gallant Admiral has touched on a terrible danger when he says that the morals of our people, the physique of our people, are being let drift. A recruit from the Westphalian mines, or from the shops of Berlin, who goes into the German Army for two years, at a youthful time of his life, meets with people of different ranks and motives, and is able to observe a variety of subjects, which must do him good, for all knowledge is good. Consider the difference between a man who is a Volunteer and who has done a little drill, and the same man who has done none. Consider the difference between an artisan who is in the Queen's Westminster Rifles, and another man who has never done any drill whatever. There is no comparison between them. We do not show our children the country; they know nothing about the life of nature, the plants, or the birds. All this is degeneracy; and it will be too late, soon, for reform. If you could get these young men out into the country, and could teach them how to scout through a wood, to observe the face of nature, how to jump and run, and do all the exercises that every Roman and Italian have to do, they would soon become masters of the world. They should not merely be taught shooting, although that is a very important thing, as my distinguished friend, the Editor of the *Spectator*, has said; he is setting an excellent example, and it does him and the country a great deal of good. I have said these things over and over again, but my principal object in getting up is to try and generate a kind of enthusiasm for the moral and physical elevation of the masses of our people. This would re-act on the young women. There is not in the least reason why these young gentlemen, if they wish to court, should not go courting and observing nature at the same time, instead of sitting in the corner of a public-house—not the slightest reason. It would benefit everybody if everyone brought out their children, and showed them something of nature, and taught them how to play efficiently. Consider the 1,600 yeomen who were trained in our riding school; on one day there were several hundred being trained, and not a man knew how to mount a horse—and they were all getting 5s. a day. The only men that could mount horses and do anything in the riding school were deserters from the Royal Artillery! When a considerable number of these marvels were going out to South Africa, even of the first and better batch, an old sergeant, who had taught the artillery officers, said, "Gentlemen, do you call yourselves horsemen? because, if you do, never tell anyone you were taught in my riding school. I tell you plainly that from the way in which you are mounting and dismounting with the rifle in your hands, and the slowness of your mounting, that you will all be shot or taken prisoners." I emphasise that; although I am stout and old, I could mount quicker than most of these young men, simply because I had been taught to mount, not to speak of knowing how to groom a horse, for we, in Ireland, were able to groom our ponies at the age of 15. "As sure as you ever encounter a Boer you will be taken prisoner," said the instructor—and every mother's son of them was taken prisoner! So that not only is this physical training, whether it is horsemanship, jumping, shooting, scouting, or observing nature, good from the moral point of view by taking people from impurities to purities, from close and fetid atmosphere to the fresh breath of nature, but it is good for the physical manhood of the country in time of war. If ever an emergency arises the man who knows something about the aspects of nature, who

can see before him, who can find his way in a fog, will be of the greatest use. You have admirable opportunities in London of training men in that respect, of following von Haezel's system, and practising military exercises in fogs. I first congratulate the audience upon being honoured by hearing a lecture from a distinguished artillery officer, a friend of my youth. I urge upon this audience to do all that in them lies to facilitate the views of General Webber, Mr. Strachey, and the lecturer, by means of which we shall have handy people ready to assist the Army as well as armed men; to facilitate the views of the distinguished *Spectator* on my right, whose views are so ably expressed every Saturday.

Major A. D. Seton (the Forfar and Kincardine R. G. Artillery Militia):—There can be no two opinions on the value of the scheme which has been brought forward by the author. But, in view of what happened in the Franco-German war, it is very important that any scheme of this kind should be put upon an official footing. A gentleman who has spoken has referred to the field day which was held in connection with rifle clubs. That has thrown quite a new light on my mind with regard to the way in which these rifle clubs are to be used. I think that is a very excellent thing; but if they are going to be used in that way in time of war, unless there is some official status given to them before war breaks out, some sort of status equivalent to the Volunteers, in the event of an invasion or of a raid they will run a very imminent risk of everyone of them being strung up to the nearest tree, or shot against the nearest wall, if they fall into the hands of either the French or the Germans. That is most undoubtedly the fact, because it is quite impossible to believe that the French or the Germans would conduct a war in the way in which we conducted our war in South Africa. We have had a good deal about compulsory service, or compulsory Volunteering of one kind and another said this afternoon. There is one thing in that connection which occurs to me: I will not discuss the pros and cons of the question. It is very seldom mentioned in this country, but it is a most potent factor in Germany with regard to compulsory service. We are very frequently treated by opponents of compulsory service to pictures of unwilling conscripts being dragged off to serve their time in the Army. I know a little of what goes on there, and, as far as my observation and experience go, that is not the case at all. The young men are only too anxious to serve, for the very simple reason that no girl will look at one of them until he has served his time. It seems to me that that is a line which might be adopted with much advantage in this country. If the ladies of the land would lend their assistance to this scheme, and support us by giving the cold shoulder to anyone who did not assist in their country's defence, I am quite certain it would act far more potently than any Act of Parliament that was ever passed.

A Member of the Audience:—Might I ask the Chairman a question of deep personal interest to me, namely, what is the state of the International Law under the Hague Convention in regard to the riflemen? Have they the rights of belligerents or not? I thought under the Hague Convention they were given belligerent rights.

The Chairman:—They must be in organised bodies, under responsible commanders. They must conform to the laws and customs of war, and they must wear a recognisable badge; but, of course, it is for the enemy to determine what that means.

Colonel DAVIDSON, in reply, said :—There are only a very few points to which I wish to refer. In reference to what Mr. St. Loe Strachey said with regard to the guides and rifle clubs being amalgamated, I have already altered what I said in the paper. I have said that "a body of guides *in conjunction with* a sound system of local rifle clubs would be a valuable addition to our forces if called on to mobilise for home defence." I think they should be united with the rifle clubs. With regard to General Webber's remarks, the difference between us is this. I did not say "unless he has learned to shoot indifferently!" I say, "unless he has learned to shoot!" I think that to teach men to shoot indifferently is the most dangerous thing you can do; but I particularly said that I intended to qualify as marksmen. I agree with the gallant General that there are thousands of men who would be of great use, although they never carried a rifle at all. With regard to what the last speaker said on the subect of International Law, if he will read "Hall's International Law," pages 543-546, he will find it distinctly laid down that the inhabitants of a country may always fight to resist an invader of their country in any clothes, so long as they work with military bodies, under military officers, and that the only person who can be shot is what is called a franc-tireur, a man who works by himself, and is not under a military officer, and who wears civil clothes at one moment and a military badge the next. I propose that all our men should have brassards and bandoliers if they can use rifles.

General J. H. DUNNE :—In regard to the rifle clubs that have been organised all over the country, those who command and lead them can hardly be called military officers.

Colonel DAVIDSON :—But they will always be attached to a military body.

Mr. ST. LOE STRACHEY :—In my scheme we presume that military officers have been sent down to the North Downs to raise the local rifle clubs, and to give them a particular work in defending a station.

Colonel DAVIDSON :—In every case they would be attached to a military body, and be amalgamated with it. Even if two or three, or even 200 or 300 *were* shot as franc-tireurs, surely that is not to be compared with the safety which will be obtained by having 200,000 or 300,000 of these men in the country, ready and willing to take their share in "home defence."

The CHAIRMAN (Major-General Sir J. C. Ardagh, K.C.M.G., K.C.I.E., C.B., late R.E., *p.s.c.*) :—We have heard, I think, with unanimous satisfaction the lecture which Colonel Davidson has favoured us with. So far as the remarks which have been made by the various speakers who followed him are concerned, I think there is practically no difference of opinion at all as to the desirability of organising the corps of scouts and guides which he has taken up in this admirable way. All that seems to be further necessary is to obtain official sanction and assistance for carrying on the enrolment of the scouts and guides, and for giving them a definite place in the organisation for defence. The various speakers who have succeeded Colonel Davidson have illustrated the different points of view which have come forward. Amongst others I would wish to call

attention to the very favourable way in which the gallant Admiral, who represents the sister service, spoke of this system, and gave his blessing to the general organisation for the whole of our forces for our defence. Notwithstanding that we rely on the Navy as the first line of defence, he quite admits that there must be something behind it. You must not depend entirely on the first line, and the fact of attempting to do so would inevitably result in that first line being called back to our own shores to protect localities, and be diverted from their proper strategical and tactical duty in hunting out and defeating the enemy. I have now simply remaining the very pleasant duty of asking you to pass a vote of thanks to Colonel Davidson for the admirable lecture which he has given to us.

THE DISPOSAL OF THE WOUNDED IN NAVAL WARFARE.

By Dr. PHILIP RANDALL (late Surgeon, R.N.)

Tuesday, May 12th, 1903.

Sir HENRY G. HOWSE (President of the Royal College of Surgeons) in the Chair.

THE matter of the disposal of the wounded in naval engagements under modern conditions is one that has possibly from oversight, or more probably from its inherent difficulties, received but scant attention relatively to its importance.

There is a general consensus of naval opinion that a naval engagement under modern conditions would certainly be attended with much loss of life, and with a large number of severe injuries. This opinion has been amply justified by the experiences undergone by the combatants in the Chino-Japanese and the Spanish-American Wars.

Some attempts have recently been made to call attention to the subject, but there is an almost complete absence of all reference to the subject of dealing with the wounded in the works of all the leading authorities on modern naval warfare. It would appear, in fact, that the topic is considered to be a matter of very minor importance, or it is tacitly assumed that the means at the disposal of the Naval Medical Service for the due performance of their duties during, and after, an action, are so completely satisfactory, that nothing need be said about them; no matter from what point of view the writer may be dealing with the problem of sea-battles under existent conditions.

The importance of the subject, however, cannot be questioned from any point of view. The executive officers will find the presence on board of a large number of wounded to be a sore let and hindrance to the efficient working of a ship in any case in which they may haply find her after an action, whether, as regards her further usefulness as a fighting unit, supposing that the injuries received in action are not sufficient to interfere with her sea and battle-worthiness, or, on the other hand, if compelled by serious damage to struggle to the nearest port for repairs.

The medical officers view with much foreboding and positive dismay the prospect of being called upon to deal with a large number

of serious injuries, involving most probably in a large proportion of cases the performance of major operations, in such situations and under such conditions as are eminently unsuited for such purposes. Most especially does this apply to the after treatment of the cases, always important and of most critical moment.

Any consideration of the question leads to only one conclusion, which is that it will be impossible to do even bare justice to their work, however so well equipped they may be in professional attainments, and however so anxious to do their duty efficiently.

The sense of security that all will be well cannot, therefore, be justifiably entertained, and, as a matter of fact, no such feeling by any means exists among those whose work has lain in modern battle ships, or other ships of a class likely to be actively employed; neither among those whose duties are to carry out the primary and necessary purposes for which the ship of war exists, nor among those into whose hands are committed the due care and treatment of all who, by reason of injuries received, need their professional services.

The conditions of naval warfare have most profoundly changed since last our Navy was engaged in great wars. This, as regards ships and armaments, is a perfectly trite remark, but with respect to the accommodation for the wounded the equally great disparity that exists appears to have been passed over almost without notice.

Broadly stated, this difference consists in the fact that, whereas in the days of the old wooden line-of-battle ships the wounded were promptly, by means of the big open hatches, removed to the cock-pit, where they were out of reach of further harm from shot and ball, thus gaining comparative peace and safety so long as their ship remained afloat; nowadays, in no modern battle-ship, with the exception of the "Nile" and "Trafalgar," can this temporary security be obtained, while promptitude in "striking down" the wounded is no longer possible.

That canon of civilised warfare, which requires that no unnecessary suffering shall be caused in the process of crushing an enemy, would therefore seem to have been more amply met and carried out in the days of yore than can be possibly hoped for under the conditions now existing afloat.

The removal of the wounded is in itself of the greatest advantage to the survivors, who are thereby enabled to carry on with their duties free from the depressing effects and emotions, which are caused by the spectacle of friends and mess-mates sore-wounded and in great suffering. In all armies, arrangements exist for the prompt removal of the sick and wounded from the front.

The advantage claimed for the cock-pit of old is the only one that can be urged in its favour, being, moreover, one of a temporary nature only, for the advantage ceased when the action was over. In all other respects the place was as evil an one as could be imagined, for it was dark and noisome, with no ventilation, and soon became to those lying in it of most deadly effect, by reason of the many open wounds segregated there, especially under the then conditions of surgical treatment. The mortality among the wounded in those days reached an enormous figure, and the sufferings entailed upon all were terrible, both, however, being effects due to preventible causes in places other than such close, dark infernos. A return to

the cock-pit system will assuredly bring about most, if not all, of the same dire effects in all modern ships.

The sick-berth of the present day has gained light and air (but not in every case) at the cost of space, and of immunity from further injury for its inmates while the action lasts. The situation selected for it in all modern ships is thoroughly recognised to be one which would be absolutely untenable in actual warfare. For this reason, and with the further traditional object of procuring some sort of security for the wounded, another site is chosen somewhere in the ship, where a dressing station can be established which affords in some measure a hope of protection during battle. The station selected answers passably well for the purposes of the "General Quarters" of routine and of inspections, but in not a single instance would the position be even practicable in action, while for afterwards it would mean a return to the worst of the ancient evils.

It must be remembered, and the fact cannot be too strongly insisted upon, that the duties of the naval medical service are by no means at an end when the wounded have received such immediate treatment as may have been called for by the nature and extent of their injuries. The period of convalescence is one which at all times calls for constant and anxious attention, but more particularly after major operations, performed upon those who, at the time of their injury, sustained in consequence a profound shock to the whole system. Shock, *per se*, adds greatly to the difficulties present and the dangers to be apprehended in every case.

It is, moreover, absolutely essential in the light of modern surgical knowledge and experience that, to ensure a fair field for proper treatment, both at the time and afterwards, there must be a provision of such prime hygienic necessities as space, light, fresh air, warmth, comfort, and complete freedom from all septic dangers.

It has been by the evolution of, and the strictest attention to, all these details, that the modern triumphs of surgery have been achieved; without them the very best surgical skill will avail nothing of its ultimate object and proper office—the saving of life.

Before making any suggestions as to what might, or should, be done, it is necessary to institute as complete an inquiry as possible into the present state of the matter in question. There are three main headings into which the subject may be said to naturally divide itself. First to be considered are the means at present existing in ships for the accommodation of the wounded; next the state of things that will actually obtain and have to be dealt with during, and after, an action; and, finally, how far the present means will meet the actual needs.

In considering the means at present existing in ships for the accommodation of the wounded, the first point which seems most naturally to offer itself for attention is the position and capacity of the sick-bay provided in each ship, seeing that this is the only place in the ship devoted to, arranged and fitted out for the work of the Medical Staff. However, in all modern ships it has been found necessary to seek for a cock-pit for use in action, and a site is officially selected for such use. It is this place, therefore, that must needs be considered and not the sick-berth.

The reason for thus harking back to former methods will be easily understood after shortly passing in review the positions that

have been occupied by the sick-bay in the different types of ironclads, taken in chronological order from the earliest to the latest.

Type.	Date.	Position of Sick Berth.	Protection.	Accommodation.	Position of cock-pit.
Warrior (broadside)	1861	Lower dk. fwd. above W.-L. ...	nil.	4 cots.	not known.
Achilles (broadside)	1864	Lower dk. fwd. at W.-L. and ...	4½ ins.	4 cots.	—
		Auxiliary, Main dk. fwd. ...	nil.	2 cots.	
Bellerophon (broadside)	1866	Lower dk. fwd. at W.-L.	6 ins.	?	—
Minotaur (broadside)	1867	,, ,,	5½ ins.	6 cots.	—
Hercules (C.B.)	1868	,, ,,	6 ins.	8 cots, 16 hmks.	—
Invincible (C.B.)	1869	,, ,,	6 ins.	4 cots.	—
Monarch (turret)	1869	Main dk. fwd. above W.-L. ...	nil.	2 cots.	?
Sultan (C.B.)	1871	Lower dk. fwd. at W.-L. and ...	6 ins.	8 cots, 18 hmks.	—
		Auxiliary, Main dk. aft. ...	nil.	4 cots.	
Devastation (turret)	1873	Main dk. aft above W.-L.... ...	nil.	4 cots, 6 hmks.	?
Dreadnought (turret)	1875	Main dk. fwd. above W.-L. and	nil.	5 cots.	—
		Auxiliary Main dk. midships ...	11 ins.	8 cots.	
Alexandra (C.B.)	1877	Main dk. amidships above W.-L.	nil.	3 cots.	?
Neptune (turret)	1878	Lower dk. fwd. above W.-L. ...	nil.	8 cots.	?
Nelson ...	1880	,, ,,	nil.	4 cots, 7 hmks.	Lower deck platform,aft.
Inflexible (turret)	1881	Upper dk. fwd. superstructure ...	nil.	4 cots, 8 hmks.	Lower deck platform,aft (4 cots).
Hero (turret)	1882	Upper deck superstructure amidships...	nil.	2 cots.	Lower deck platform,aft.
Impérieuse (barbette)	1886	Upper dk. fwd. above W.-L. ...	nil.	8 cots, 6 hmks.	Lower deck platform,aft.
Colossus (turret)	1886	Main dk. aft. superstructure ...	nil.	3 cots, 13 hmks.	Lower deck platform,aft.
Collingwood (barbette)	1886	Main dk. fwd. above W.-L. ...	nil.	3 cots.	Lower deck.
Aurora (Arm. cruiser)	1887	,, ,, ,,	nil.	3 cots.	,,
Sans Pareil (turret)	1887	Main dk. amidships, superstructure	nil.	?	,,
Nile (turret)	1890	Upper citadel fwd. above W.-L.	5 ins.	6 cots.	Lower citadel aft.
R. Sovereign (barbette)	1892	Main dk. fwd. above W.-L. ...	nil.	8 cots, 12 hmks.	After barbette flat.
Centurion (barbette)	1893	,, ,,	nil.	8 cots, 12 hmks.	,, ,,
Majestic (barbette)	1895	,, ,,	nil.	8 cots, 16 hmks.	,, ,,

So far as concerns the subject under discussion, the "Majestic" type persists in all subsequent types of battle-ships, both as regards sick-berths and cock-pits, and the same general plan is carried out in cruisers, protected and armoured.

This table shows how, in the latest types, the sick-berth has quite passed from the protected position at, or below, the water-line, and behind the armour-belt, which it occupies in the broadside and central battery classes. In all other classes the sick-bay is placed in a situation which is completely exposed, so far as warfare is concerned, though infinitely preferable for use in the work of time of peace. The only modern ships having a protected sick-berth are the "Nile" and her sister-ship the "Trafalgar."

The upward progression of the sick-bay has been brought about by a force of circumstances, which, in the light of modern medical knowledge, is easily appreciated, when it is remembered how much importance is now known to attach to the supply of daylight and fresh air. Neither of these most necessary details could be obtained with either certainty or ease and freedom in places so buried in the depths

of the ship as were those assigned for medical purposes in the older types of battle-ships. The first instances of the effect of this upward pressure towards light and air can be seen in the provision of a "supplementary sick berth" in some of the early types of ships for use in peace time, on a deck well above the water-line. This supplementary berth has grown at the expense of the traditional water-line one, until the latter has, for some time past, been improved out of existence.

There can be no question as to the reality of the improvement that has been brought about from the point of view of the treatment of cases in time of peace, but, as has already been pointed out, it carries with it the disadvantage of an exposure so complete as to render it absolutely useless for the purposes of actual war.

The accommodation provided in the sick-bays never exceeds eight beds in any battle-ship, and there is, as a rule, swinging room for a dozen or more hammocks, sardine-fashion. The total accommodation, therefore, would not suffice for more than about twenty-four cases.

A return to the cock-pit principle has been decided upon officially for some time past, but, beyond the selection of a site, nothing further has been done to make the place selected in any way fit for its important duties, except the provision of an operating table (which is part of the carpenter's stores).

The question of the accessibility of the cock-pit from the fighting decks raises a practical difficulty which has always been present, and has become increasingly harder to compass in each new type. The features that so complicate the matter are due to the introduction, and the more and more extensive use, of water-tight compartments, with a corresponding increase in the number of the divisions and subdivisions of a ship by means of water-tight bulkheads. The use of armoured decks introduces a still further interposition of difficulties. When the ship is cleared for action, every opening in all these transverse, longitudinal, and horizontal partitions, is necessarily closed up, only such as form the means of communication between the magazines and the fighting stations being left open. "Striking down" the wounded to a dressing station improvised below the armoured deck has, therefore, become a matter of considerable difficulty, for the choice of position for such work is not only limited by special needs as to size of aperture necessary, but also by the finding of a hatch that can possibly be used for the purpose. A torpedo-hatch is usually selected as having sufficient size and probable freedom from other uses.

When the wounded have been brought down through a hatch to the flats, there still remains the necessity of finding a suitable place for their bestowing; but whether it be the barbette flats, the wing passages, or the bath-rooms for the engine-room ratings, the same serious objections apply to all. In not one of them is there any supply of air or light, other than by artificial means. The boiler and engine-rooms are in close proximity, keeping the places at a high temperature, and rendering the air close and stuffy even under the ordinary conditions of cruising, when all the boilers are not in use and every possible opening is kept free. Tightly closed down in action, with all the boilers alight, will mean a very considerable aggravation of already objectionable conditions.

It might, perhaps, be possible to accommodate about forty cases in these flats, but to do so they must be laid on the deck and packed closely together.

These then are the means at present provided for the disposal of the wounded, and the next point can now be considered, viz.: the state of things that will actually obtain and have to be dealt with during, and after, an action. In other words, it is necessary to determine as approximately as possible the number of wounded that will have to be dealt with as the result of an engagement.

As is the case with nearly all questions concerning the behaviour in action of modern ships, and their methods of offence and defence, not much information can be gathered, except a few details from the Chino-Japanese war. Practically nothing of advantage for this purpose can be garnered from the records of the Spanish-American war.

In order to arrive at some definite conclusion, the figures of some of the battles of the last great wars have been taken, and from them has been obtained a mean of the percentage loss by wounded to the effective strength engaged. A like average has been obtained for comparison from the figures officially published by the Japanese Government as the result of the battle of the Yalu River. From this comparison has been obtained what may be taken to serve as a working average. The comparison thus instituted between old and new is not so out of place and unfair, as might at first sight appear. The "wooden walls" were in reality walls of great solidity and thickness, amounting in fact to a wooden armour which, though proof against "long bowls," was not so in close action; practically the same protective conditions may be said to exist in the armour of the present day.

Yalu has been taken for the modern side of the comparison, as modern arms and armour were there in use. Lissa may, in this respect, be said to be relegated to the period of ancient history.

The following table gives the actual figures of the great battles of former days, and the averages derived therefrom:—

Battle.	Nation.	Numbers engaged.	No. of wounded.	Percentage of wounded to total force.
Camperdown	Dutch ...	7,150	620	8·67
	British ...	8,221	622	7·56
1st of June	French ...	19,760	?	—
	British ...	16,647	858	5·16
Nile	French ...	9,820	?	—
	British ...	7,401	678	9·16
Trafalgar	Allies ...	21,580	?	—
	British ...	16,820	1,241	7·38
Mean of percentages				7·31

At Copenhagen 16 ships were engaged, with a loss in wounded of 688 by one account, 950 by another.

At St. Vincent 15 ships had a total loss by wounded of 227.

Losses in single ship and small squadron actions varied from 0 to 20 per cent. of force. The latter figure was attained in the action between the "Chesapeake" and "Shannon."

Losses of individual ships at Trafalgar varied from 0 ("Prince") to 27 ("Colossus") per cent. of complement.

The official returns of the losses by wounded by the Japanese Fleet at the battle of the Yalu River are:—

Ship.	Complement.	No. of wounded.	Wounded per cent. of complement.
1. Matsushima	360	76	21·11
2. Chiyoda	350	0	0·00
3. Itsukushima	360	18	5·00
4. Hashidate...	360	9	2·50
5. Hi-yei	308	37	12·01
6. Fusoo	386	12	3·11
7. Yoshino	?	11	?
8. Takachiho	365	2	0·54
9. Akitsusu	?	10	?
10. Naniwa	365	1	0·27
11. Akagi	113	17	15·04
12. Saikio	?	11	?
Mean of nine ships			7·39

Of the total number of wounded, 204, there subsequently died on board, or in hospital, 32, or 25·68 per cent. These were distributed as follows:—

Matsushima	22	29 per cent. of wounded.
Itsukushima	1	5½ " "
Hi-yei	4	11 " "
Fusoo	3	25 " "
Yoshino	1	9 " "
Saikio	1	9 " "

It is stated in the Naval Intelligence report of the engagement that "early in the action the 'Hi-yei' was struck by a shell, which exploded in her ward-room. This was a part of the ship quite unprotected. A dressing station had nevertheless been established there, and both the medical officers were killed by the shell while at their work. All the wounded subsequently died."

The comparison yields a remarkably close result, and suggests a very notable agreement between the results of former days and the present time. It is to be remarked, however, that the Japanese must be credited with a much lighter rate than would have been the case had the gun practice of the Chinese been at all accurate, and their projectiles filled with a better ballistic than sawdust.

There are, therefore, strong grounds for the belief that, in an action in which there are highly-trained and skilful gunners on each contending side, the number of wounded will show no diminution on that obtaining in the old days, especially as all fire will now be concentrated upon the hulls, and not upon masts and sails, which latter were the primary object of our former foes.

A working average of seven per cent. of the complement, as the number of wounded to be expected in each ship in action, cannot therefore be said to err on the score of exaggeration, but must rather be looked upon as the irreducible minimum.

If this figure is taken as a working average, and applied to battle-ships, etc., now composing our main fleets, and certain to be actively

engaged in a naval war, an approximate number will be obtained of the wounded that will have to be treated in each ship that emerges from the contest. At the same time it must be borne in mind that this approximation may only represent a third, or even a fourth, of what may actually occur.

The line-of-battle in the Mediterranean Fleet is composed of the following ships:—

Ship.	Complement.	Wounded at 7 per cent.
1. Bulwark...	750	52
2. Cæsar	757	53
3. Russell	750	52
4. Formidable	750	52
5. Venerable	750	52
6. Illustrious	757	53
7. Implacable	750	52
8. Irresistible	750	52
9. London	750	52
10. Ramillies	712	50
11. Renown	764	53
12. Repulse	712	50
13. Vengeance	750	52
14. Victorious	757	53
Totals	10,459	728

The Channel Fleet has the following battle-ships:—

Ship.	Complement.	Wounded at 7 per cent.
1. Hannibal	757	53
2. Jupiter	757	53
3. Magnificent	757	53
4. Mars	757	53
5. Majestic...	757	53
6. Prince George	757	53
Totals	4,542	318

The Home Fleet battle-ships consist of:—

Ship.	Complement.	Wounded at 7 per cent.
1. Revenge...	712	50
2. Resolution	712	50
3. Collingwood	460	32
4. Benbow	525	37
5. Anson	515	36
6. Camperdown	515	36
7. Sans Pareil	630	44
8. Royal Sovereign	712	50
9. Royal Oak	712	50
10. Empress of India	712	50
Totals	6,205	435

The China Fleet has in line-of-battle:—

Ship.	Complement.	Wounded at 7 per cent.
1. Albion	750	52
2. Glory	750	52
3. Goliath	750	52
4. Ocean	750	52
Totals	3,000	208

To arrive at "Fleet totals," account must be taken of all ships likely to be present at an action in company with the battle-ships, although not in the line-of-battle. Cruiser actions also are far from unlikely to occur, and in these the 7 per cent. average is almost certain to be exceeded.

Taking the Fleets seriatim, the cruiser portion of the Mediterranean Fleet comprises: —

Ship.	Complement.	Wounded at 7 per cent.
1. Aboukir	700	49
2. Bacchante	700	49
3. Intrepid	273	19
4. Diana	437	31
5. Gladiator	480	34
6. Hermione	318	22
7. Dryad	120	8
8. Hussar	120	8
9. Naiad	273	19
10. Pandora	224	16
11. Pegasus	224	16
12. Scout	156	11
13. Speedy	85	6
14. Vindictive	480	34
15. Vulcan	433	30
16. Pioneer	224	16
17. Pyramus	224	16
Totals	5,471	384

Total wounded for the Mediterranean Fleet:—

Battle-ships	728
Cruisers	384
Total	1,112

The cruisers attached to the Channel Squadron are:—

Ship.	Complement.	Wounded at 7 per cent.
1. Doris	437	31
2. Furious	480	34
3. Hogue	700	49
4. Pactolus	224	16
5. Prometheus	224	16
6. Sutlej	700	49
Totals	2,765	195

In addition to these are the ships of the Cruiser Squadron:—

Ship.	Complement.	No. of Wounded at 7 per cent.
1. Brilliant	273	19
2. Hyacinth	450	32
3. Good Hope	700	49
4. Medusa	218	15
5. Minerva	437	31
6. Rainbow	273	19
7. Drake	700	49
8. Medea	218	15
Totals	3,269	229

The Reserve Fleet has the following cruising ships:—

Ship.	Complement.	Wounded at 7 per cent.
1. Bellona	169	12
2. Spanker	90	6
3. Onyx	85	6
4. Venus	437	31
5. Speedwell	90	6
6. Hebe	85	6
7. Severn	325	23
8. Apollo	273	19
9. Alarm	85	6
10. Gleaner	90	6
11. Melampus	273	19
12. Andromache	273	19
13. Reward	85	6
14. Antelope	85	6
15. Dido	437	31
16. Skipjack	90	6
Totals	2,972	208

The total wounded from Channel and Reserve Fleets amount to:—

Battle-ships—Channel	... ...	318
,, Home	... ...	435
Cruisers— Channel	... ...	195
,, Cruiser Squadron	... ...	229
,, Reserve	... ...	208
Total	... .	1,385

The cruisers in the China Fleet are:—

Ship.	Complement.	Wounded at 7 per cent.
1. Amphitrite	700	49
2. Thetis	273	19
3. Argonaut	700	49
4. Blenheim	590	41
5. Cressy	700	49
6. Eclipse	437	31
7. Pique	273	19
8. Talbot	437	31
9. Terrible	894	63
Totals	5,004	351

The wounded of the China Fleet would amount to:—

Battle-ships	208
Cruisers	351
Total	559

No account has been taken of the large number of torpedo-boat destroyers now in commission, and attached to the different fleets. Such of these as survive a general action, supposing them to be actively engaged, would have some wounded to swell the general totals.

Having now arrived at an estimation of the number of wounded that may be expected, the condition of the ship itself after an action may be considered.

The accounts published of the results to ships in the Chino-Japanese and in the Spanish-American wars, the opinions therefrom deduced and expressed by naval experts, and the views generally held as to what will be the most probable consequences of an action to ships, may all be shortly summed up as follows:—the unarmoured parts will be completely riddled by every sort of projectile, shot, shell and bullet, so that the internal arrangements of these parts will be in a state of complete and thorough disorganisation, due not only to the wreckage and destruction wrought by shell explosion, but also to the consequent outbreaks of fire; as regards the armoured parts of the ship it is at least doubtful whether the best protection yet devised

will remain intact, so that at any rate there can be no doubt about what will happen to parts where there is a less amount of protection by armour, whether in thickness or in quality of face. It is, in fact, laid down by more than one authority that, to escape as much as possible the far-reaching and devastating effects of shell, it will be better to have no protection at all than a moderate easily pierceable amount. Much the same disorganisation will therefore be found within the armoured parts as without, though maybe not to the same degree of destruction.

The ship's boats, if kept on board, will be found quite useless after an action, for, even if not destroyed and burnt by the enemy's fire, the concussion of the guns on board will shake them so much apart as to render them quite unfit for service. This was experienced in the fleet that bombarded Alexandria. It seems probable that in future no boats will be kept on board when going into action. This course was adopted by the Chinese after the experience gained in one of the first encounters of the war, that between the "Tsi-Yuen" and the "Yoshino," and it is said the French naval authorities have decided to follow the same line of action.

Two other points bearing directly on this part of the subject are, the accommodation provided in the naval hospitals, and the probable distances from these at which naval actions may occur. It is not possible, with regard to the latter point, to indulge in any speculations, except in works of fiction, but it may be of use, nevertheless, to note the distances at which the battles of old took place from the hospitals.

Haslar has accommodation for 1,013 patients; Plymouth for 700; Chatham for 828; and Haulbowline for 125.

Malta can accommodate 280 patients, and Gibraltar 119.

At Hong Kong there is accommodation for 71 patients, and at Yokohama for 96.

The battle of Camperdown was fought about 240 miles from Chatham, and 380 from Portsmouth. The battle of the 1st June took place about 550 miles from Plymouth and 660 from Portsmouth. Cape St. Vincent is 200 miles from Gibraltar, 850 from Plymouth, and 970 from Portsmouth.

Aboukir Bay is 825 miles from Malta, and 1,809 from Gibraltar.

Copenhagen is 780 miles from Portsmouth

Trafalgar is about 60 miles from Gibraltar, 1,000 from Plymouth, and 1,120 from Portsmouth.

We are now able to consider how far the means at present provided will go to meet the demands that will actually be made upon them. It will enable matters to be seen more clearly if the facts, as established, are actually applied to a ship like the "Majestic," as fairly representing the modern type of battle-ship.

The "Majestic" has a complement of 757. The sick berth has accommodation for 8 cases in cots, and 16 in hammocks. It is situated in the fore-end of the ship, just outside the armoured redoubt on the main deck. It is therefore not only unprotected from every sort of projectile, but is in a part of the ship which is certain, from the close neighbourhood of the fore barbette (containing one of the two pairs of heavy guns on board) to be a point upon which will be concentrated a continuous and heavy attack by the enemy's fire.

The cock-pit would be established in the lower deck flats, below the armoured deck, and inside the protected part of the ship. Either the barbette-flats, the wash-places, or the ammunition passages would

be selected. The sole means of communication between such places and the fighting decks would be devious and difficult; the only provision of light would be by artificial means, and probably only candles; while all means of ventilation would be cut off by the closing of the armoured deck, and the many bulkheads that exist. This last measure would be a vital necessity for the ship, but would make many times worse an atmosphere which, under ordinary conditions, is close, mephitic, and kept at a high temperature by the proximity of the boilers, all of which would be in use. The vitiation of the atmosphere of a closed space increases rapidly with each expiration from the lungs made by every person present therein, and each addition to the number of persons adds to the foul and poisonous condition.

The number of wounded to be expected, according to the average, will not be less than 53. When the ship emerges from action, with her unarmoured ends completely wrecked and disorganised; with her armoured parts in a somewhat similar condition; with numerous shot holes and rents in her sides, allowing seas to wash in freely, so that the decks and flats about the level of the water-line will be flooded with water; with, perchance, injuries from ramming or torpedo, which, by alteration of stability, or damages to engines and other vital parts, will only add to the general confusion; and with lighting and ventilating arrangements probably altogether unworkable, and completely broken down; how, and where, it may be asked, will it be possible to find a place, wherein at least 53 men with, in the majority of instances, severe wounds can receive, in even the least degree, that immediate care and attention, and especially the fitting after-treatment, which are necessary to save their lives?

The attempt to accommodate them in the flats can, and will, only mean a return to the disastrous effects of earlier days. The teachings of former experience have been writ large in naval, military, and civil practice, and the meaning of the writing on the wall cannot, nowadays, be possibly misunderstood or misconstrued. Consequences of terribly fatal effect will most certainly be entailed if, and whenever, fifty men—or for that matter half a dozen—are closely packed together on the wet deck of a heated, stuffy, place, never visited by daylight, having no natural supply of pure air, and with the artificial supply of both most probably cut off.

They would have to breathe an atmosphere thickly charged with respiratory products and human emanations. The blood about the deck, the clothing, the bedding, and dressings, would speedily become putrescent, and there would soon be poured forth, from the large wounds, a vast amount of putrescible discharge. In a medium so favourable to the production and rapid growth of many kinds of infective bacteria, erysipelas, tetanus, hospital-gangrene and all the fell products of septic infection would inevitably be developed; while all means would be powerless to avert their ravages. They would deal death far and wide among all cases of wounds, whether these were of large or insignificant dimensions.

The percentage of deaths amongst the wounded on board the "Matsushima" (29 per cent.) is, in these days of surgery, especially in the hands of the Japanese, an enormous one. It must be attributed to a very large extent to the crowding together of 76 wounded in a ship of her size.

Demonstration has now been made that the number of wounded will be large in every ship actively engaged; that the accommodation, at present provided in ships, will be insufficient for even a fourth of the number that may be expected; that this accommodation, being in the unarmoured part of the ship, will be impracticable for use during action; that it will be absolutely unfit for any use whatever afterwards; that it will be impossible to obtain elsewhere in the ship adequate and proper accommodation for the wounded; that the suggested cock-pits are in no wise suitable in size or in general conditions; that the use of so insanitary a place will infallibly bring about outbreaks of septic diseases of the most virulent kind; that no means of transport will be found on board available for use after action; and that the only hospitals large enough to receive the numbers consequent on a fleet action are at Portsmouth and Plymouth.

It is claimed that the evidence thus adduced and set forth can lead, after careful consideration, to but one conclusion. This is that in the fighting line afloat, as in the case in that ashore, all treatment of the wounded beyond "first aid" will be impracticable, and further, that after-treatment on board will, in justice to the wounded, be a practical impossibility.

A visit to any modern ship, in a spirit of enquiry as to the possibilities of adapting means to an end in this connection, will only serve to confirm the conclusion arrived at. It can then be most clearly recognised how completely the space inside the hull is taken up by what are absolute necessities for carrying out the real purposes for which the ship exists. This conclusion it is that effectually disposes of the suggestion that has been offered, and to some extent entertained, as a solution of the difficulty. The scheme is based upon the idea of putting the Medical Staff out of harm's way during the action, by immuring them in some place of safety below the armoured deck, releasing them when the battle is over—and if the ship remains afloat. If this course is adopted, the Medical Officers will be consigned to absolute idleness at the very time when their services are most urgently needed. One certain result will be the institution of what may be called "the law for the survival of the least injured," as only those with slight wounds will remain to be treated, *secundum artem*, on the release of the doctors from a durance, not only vile in itself, but also altogether opposed to the traditions and natural instincts of an honourable and self-respecting profession. The time taken over an action is expected to be short, but will in all probability not be less than three or four hours. In that space of time how many valuable lives may be lost, in fact, wasted and thrown away, if such a course as the above were to become the rule for the conduct of the Medical Staff in action!

The remark has often been made in the course of a discussion upon the topic, that a ship is no place for wounded men. This, though no solution of the difficulty, tersely but grimly sums up the whole truth of the matter.

There is, however, an obvious way out of the *impasse*, which is, to revert to a practice of years ago, when, as recorded in James' "Naval History," hospital-ships formed part of some of the large fleets sent out. What these were like, and what work they did, is not recorded; but it is easy in these days to have a very clear idea of what can be done, and, what is more, to completely carry it out.

The adoption of the principle of hospital-ships for fleets will be quite practicable in nearly every respect, and will go far to meet the

absolute needs and requirements that have been indicated, thus ensuring the saving of many lives which must otherwise be certainly wasted, and proving economical, not only immediately in respect to life, but also financially in the long run, as there will be saved for further use the services of many skilled and highly trained men, from among whom will necessarily come by far the greater proportion of wounded.

Every fleet of battle-ships should, therefore, have attached to it one or more ships entirely devoted to, and specially fitted out for, hospital duties, flying the Geneva Cross, and complying in all respects with the terms of the Geneva Convention and those of the Hague Conference.

These fleet hospitals will cruise with the fleets, and, having first received all cases of serious illness from the ships, will accompany them to the verge of safety when they go into action. Each hospital-ship must be provided with as many large and roomy boats as can possibly be carried. By means of these boats, endeavours can be made to maintain close communication with the fighting line, seizing upon every opportunity that offers, such as a ship hauling out of action, to collect and transfer to the hospital-ship as many wounded as possible. This may, or may not, be practicable, but the main use will be when the action is over. The hospitals will then close with the fleet and their boats will bring away all the wounded from every ship in the fleet. By these means the ships of the line will be freed from the encumbrance and hampering due to the presence of wounded on board, and will be left with crews necessarily minished in numbers, but composed of those fit and able to devote their whole attention to their own proper duties.

The benefits accruing to the wounded will be incalculable, for, once received on board the hospital-ship, their treatment can be carried out, each and every case in proper detail, and according to needs, quite free from difficulties which otherwise would be overwhelming. At the same time excellent conditions for the due and proper after-treatment of the cases will be completely ensured.

The movements of the hospital-ship subsequent to the action would necessarily be governed by circumstances, but, whether despatched to the nearest available hospital or remaining at sea with the fleet, those on board will be under conditions offering the best means of recovery, and vastly different to a labouring and probably long-drawn-out voyage in a much be-damaged battle-ship, possibly unable to effect more than a few knots of speed.

Under these conditions the services of the Medical Staff would have to be disposed in three ways, in the fighting line, in the collecting boats, and in the hospital-ships.

In the fighting line only "first aid" should be rendered to the wounded, and for this purpose dressing stations should be established where possible and convenient. One medical officer in each ship would be sufficient for the supervision of this work, and his sick-berth staff should be reinforced by the chaplain and accountant staff, for all of whom thorough instruction and examination in these duties should be made compulsory. The medical officer and his staff of assistants must be free to move about the ship as expeditiously as they can, and to wherever they are most urgently needed, as, for instance, to a case-mate wrecked by a shell. A central dressing station would naturally be of the greatest assistance, but it must be regretfully admitted that

very little can be hoped for in this direction, in view of the very complicated arrangements of modern ships of war.

The introduction and general use of casemates for the guns of the secondary batteries suggests that these may, in some way, act as a screen for dressing stations established in rear of them. The deck would be clear, communication would be easy, and the wounded would be most conveniently placed for removal to boats whenever a suitable opportunity presented itself. The "striking down" difficulty would thus be completely avoided, and there would be a great gain in promptitude of attention by the Medical Staff.

The collecting boats should be steamboats of good and handy sea qualities, as large and roomy as possible, and accommodating six or eight cot cases. They must be manned by crews well skilled in boat work, as well as in the hoisting-in and -out of cot cases. Not less than twelve of these boats should be carried by each hospital-ship.

The type of ship most appropriate for the purpose of a hospital-ship is one on the general plan of a modern mail steamer of the best class, of good size, and capable of maintaining a continuous sea speed of not less than 18 to 20 knots, so as to keep station with a modern fleet proceeding at full speed. The wards should occupy the centre and forward parts of the ship, where nowadays is placed the first-class accommodation in mail steamers, thus ensuring a liberal supply of fresh air, light, and deck space. It would be well to limit the accommodation of each ship to 500 cases, so as not to involve too large a staff, and consequent difficulties in finding sufficient room for their due requirements and convenience.

The ships should be specially built for the purpose, and not adapted from existing mail-steamers, so as to ensure complete protection from septic dangers. *Mutatis mutandis*, all the details, large and minute, now introduced into modern hospitals with the object of limiting, as far as possible, resting places for dirt of every description, should be carried out in the ships so as to obtain damp and germ-proof floors, walls, and fittings throughout. In a word, the hospital afloat must be built in every respect in accordance with the principles adopted in the hospital ashore, and must be as perfectly self-contained in every respect.

With a ship thus equipped for the purposes of active service, and by strict attention to all other details besides those briefly alluded to, which ensure complete asepsis, it will be possible to remove completely the stigma formerly attached to hospital-ships, which have been used in connection with military operations from a sea-board base.

The wounded will be able to do as well as if treated in well-appointed hospitals on shore, moreover they will not be taking up room which, if found, can be ill-spared and is wholly unsuitable; they will not be in the midst of extremely insanitary conditions which cause them great distress, and are of actual deadly effect; they will no longer be exposed in a helpless and hopeless position to fresh wounds in any further action; but they will have every possible means known to modern science afforded them of remaining to prove of further use to themselves and to their country.

A profitable use can be found for such ships in time of peace. Part of the year could be devoted to cruising with their respective fleets, carrying out manœuvres which should embrace all the details for active service, thereby ensuring proper training and efficiency.

For the remainder of the year they could be used for the conveyance home of invalids ONLY from India and other foreign stations at the cost and charges of the respective military authorities. A special service in this respect would be a great boon to all concerned, and has long been needed.

The CHAIRMAN (Sir Henry G. Howse, President of the Royal College of Surgeons) :—A discussion is the usual thing, I understand, after a paper of this kind : and I should like to invite any remarks from any of you upon this subject. Individually I must confess that I feel very much obliged to Dr. Randall for presenting to us this paper, because the subject is one which we must all admit to be of very great importance not only to medical officers (to whom perhaps it is of the greatest interest), but also to all the staff and to the crews on board a ship, because the wounded will be amongst them all, and the proper treatment of the wounded must necessarily be of interest to everybody concerned on board ship. Then again I think that this is a very appropriate time for a discussion upon such a subject. We are at peace but we all remember acutely (medical officers especially) what took place in the last war—I do not mean the last naval war; I mean the war in South Africa. We remember the odium that was heaped upon the medical officers on account of the great outbreak of typhoid, because it was said insufficient precautions were taken against it. Now if we just apply that to the care of the wounded in naval warfare, and if we think this picture which Dr. Randall has drawn of the condition of the wounded on board ship to be an accurate forecast of what we shall see in future naval actions, then unless the Service is well prepared beforehand by consideration of the very best treatment under the conditions of the wounded, can we not fancy what an outbreak of public resentment and public opinion there will be if it is found that there are such conditions prevailing on board our ships as absolutely preclude the proper treatment of wounds? Clearly the subject is one of very great difficulty. It is quite clear that the treatment of wounds on board our great armoured battle-ships is one that will be extremely difficult under any circumstances. The whole subject should certainly be very carefully considered in the first place, so that we may be in the highest degree fortified by the previous consideration which has been devoted to the means for the best treatment of the wounded. The suggestion that is contained in this paper of hospital ships seems to be one of very great importance. I do not want to say more—there is no time for it—but I hope that some of you will express your own opinions.

Admiral Sir N. BOWDEN-SMITH, K.C.B. :—The care and disposal of the wounded on board ship in time of action is a difficult question, for, as the lecturer says, in peace time the sick berth must be in some portion of the ship where the men who are ill can have light and air. In my opinion the only solution is that those responsible for the arrangements in each class of ship must arrange a place where the wounded will be least open to damage from wreckage by shell fire and where they will least interfere with those combatants who are carrying on the action; for there is one thing in a battle that is after all more important than the care of the wounded, and that is winning the action. As regards the question of hospital ships, I fancy (although not behind the scenes) that the question has been thoroughly considered by the Admiralty, and I have no doubt they have got their eye on several vessels on their lists, which would be taken up in the event of a war,

or on the probability of a war, and quickly converted into hospital ships. It would not take long to convert an ordinary passenger steamer into a hospital ship. They are well arranged for carrying a large number of passengers; they have cabins, saloons, and large deck spaces, and are well fitted with awnings. They have also baths and every convenience for carrying fresh food and ice. But I protest against employing several hospital ships in peace time. It is not necessary to have one cruising with our fleets in peace time because we have now a hospital on every station. If you have a number of hospital ships attached to the fleet in peace time it would very considerably increase the present heavy estimates. During the time that I was serving I used to think it more humane, more convenient, and certainly more economical, on a foreign station, to hold a medical survey on anyone seriously ill and to send invalids home by the first passenger steamer homeward bound. I do not think it would be a wise arrangement to keep batches of invalids waiting at a port until one of these hospital ships was ready to go and collect them. If they should be too ill to be moved in an ordinary ship, these are on almost every station hospitals of some kind, if not our own, where sick men who are not able to take a long voyage could be sent until able to travel. Of course fitted hospital ships would be necessary in war time, but the wounded would not be many days on board. Immediately after a battle the hospital ship with her Geneva flag flying and painted appropriately would draw near to her fleet, and would receive the wounded from the fighting ships, but it would be unwise and improper for such a hospital ship to come near the fleet or to try to communicate with any ship while the action was in progress, unless of course a vessel had struck or was manifestly sinking, in which case I presume International Law would permit the hospital-ship to rescue the crew. If she attempted to communicate with any ship during the action she would run the risk of being roughly handled by the enemy. As regards boats, I do not think it would be practicable or even necessary to have 12 steam boats to each hospital ship as the lecturer proposes. If you had steam boats sufficiently large to carry the wounded comfortably, I should think each boat would weigh 8 or 9 tons; and steamers could not carry them or anything like it. There is no doubt as the lecturer says, that after an action the boats of fighting ships would all be destroyed, or if not destroyed by shot and shell they would be so unseaworthy from the concussion that they would not float; therefore it would be necessary for the hospital ship to be well supplied with boats, and to have some steam boats, I should say a couple of good steam boats for towing would be all that was necessary. I offer these criticisms in a thoroughly friendly spirit, and as a member of the Council of this Institution beg to thank the lecturer for bringing this subject before us. I regret that there is such a small attendance, but the paper with his interesting statistics as to the wounded in various naval battles will be published in the JOURNAL, and I feel sure will be widely read by our members all over the world.

Fleet-Surgeon J. LLOYD THOMAS, R.N. (H.M.S. "Excellent"):—I have not had the privilege of reading the paper beforehand, and therefore I have not had any opportunity of sketching any outline of it; but as an old messmate of Dr. Randall it has given me the greatest pleasure to listen to all that he had to tell us. It is a most elaborate work that he has presented to us; but I fail personally to see that he has told anything particularly new as to the disposal of the wounded in action on board a man-of-war. He has given us a most gruesome and wonderful picture of the effects of a naval battle, so striking that I wonder if ever again any doctor

will join the Navy under those conditions. However, a man-of-war is a man-of-war, and, as the Americans say, I do not think anyone goes on board "for the benefit of his health." But I cannot conceive why Dr. Randall should take the extraordinary picture of the battle of the Yula (between the Chinese and the Japanese), and compare it with anything that is likely to happen again. Now I will try to tell you why. I would divide our ships into two sets—the big ships and the smaller ships; that is the name I give, as a doctor, to *A*, our battle-ships; and *B*, cruisers and gun-boats. I think it will be remembered that the Japanese, in those waters, had nothing but cruisers, and two-thirds of them were absolutely old-fashioned; the Chinese, on the other hand, had two battle-ships. The Chinese record of death was greater than the Japanese because of the better shooting and the quick-firing guns used by the Japs and the demoralised state of the Chinese sailors—not being under cover, etc., as well as being in inordinate numbers. The figures do not appear, I think, in the tables on the paper. I am inclined to think that Dr. Randall's 7½ per cent. of deaths, in view of the information we have derived from the Chino-Japanese war, is rather misleading. One ship in particular I had the privilege of inspecting the day after the Yalu, the "Hi-Yei." There the death rate was enormous; the ward-room had been blown away, as Dr. Randall stated, with the surgeon of the ship and all those who were intended to dress the wounded; and, without a doctor, the wretched ship (a perfectly lame duck) had to make her best way to Japan, and all the wounded died on the way. There were not attendants, the bleeding patients were not looked after; therefore that augmented the percentage of the 7½ enormously. In another case there was a surgeon killed on board one of the Japanese ships—I forgot which ship it was. I submit that that would also increase the percentage of deaths as in the case of the "Hi-Yei." However, I will come to the point of the treatment of the wounded in action, or rather their disposal, if I may venture to do so, having spoken to a good many of my *confrères* in Portsmouth and at different times consulted others. I will submit very briefly my views as to what should be done in action, having regard to the type of wound or accident resulting from the hideous weapons that we are now using. I will take very briefly as an instance what would happen on board of a man-of-war. The first thing to follow the impact of a shell would be its explosion resulting in a violent shower of shell fragments in every direction, and the sudden and large development of gases. That I take it is what the doctor has to think about when considering his wounded men inside the casemates. I had hoped that Dr. Randall would have told us something new in such circumstances. What would he have us do with wounded men in action? During the past five years, a very great deal has been written on the subject, but it has always come to the same thing—"we really cannot say." That, to the best of my knowledge, if you will allow me to say so, is very much what the Spanish-American war taught us. As to the disposal of the wounded, if I may venture an opinion, and the opinion of many others—although some are quite opposed to it—I think that the removal of the wounded, be he ever so lightly wounded, is a very dangerous performance. I feel that if the explosion occurs in a casemate, or if it occurs on deck—there are not likely to be many on deck for amusement, you know—those in the casemates are the safer men in spite of the confined space and condensation of gases. Should there be any man injured, I submit that he should remain on the spot, and take his chance in this big machine for fighting until the doctor or his assistant comes and decides whether he should or should not be removed, during a lull or after the action is over. The sailor is quite prepared to take his

chances, I think, whatever they may be, whilst on board. There is a great danger in moving these men about in the present modern men-of-war in order to take them below what we call the protective deck, where he is, as near as may be, absolutely secure, having the water outside and the steel of the deck above. As to shooting them below through extraordinary holes and hoists, only the very few of those who know anything about it have any conception what it means. Half the time a man must be shot down upright and in a perpendicular position. Further, there will not be in time of war, as I understand it, any open spaces other than those inside the casemates or fighting boxes, and these are shot hoists, and it would be very difficult to lower the men down through them without interfering with the fighting efficiency of the man-of-war; and I take it, that the surgeon's duty must never be allowed to affect the fighting efficiency of the ship—we must fight and maim, and mend if may be afterwards.

Rear-Admiral H. J. May, C.B. (Captain of the Royal Naval College, Greenwich) :—We all agree that we owe a vote of thanks to Dr. Randall for coming here and addressing the Institution upon a subject upon which I scarcely remember a paper for very many years. One reason for that is perfectly apparent when one looks at this paper with a view to criticism. A man who reads a paper on a subject like this requires not only to be a skilled surgeon, but he requires to be an able strategist and tactician, a gunnery man, and I do not know how many other things. You cannot decide what is going to happen after an action, unless you know where and when and how the action is going to take place, and what is going to happen to your crew on board, unless you understand thoroughly the protection of a ship and the attack which will be made upon the men who are under that protection. I will remind the meeting of what probably many know perfectly well, that the modern ship consists first and foremost of the under-water part, which is belted round in a battle-ship, but is always decked over whether in a battle-ship or in a cruiser. When the under-water part of a ship is being designed and constructed, every department fights for space and weight—the engineers want space for their main engines, the gunnery officers want space for their magazines, the torpedo officers want space for their torpedoes, stores require much space, and everyone who wants power to do his work wants space for the engines and machinery to provide that power. The result is, that all the under-water part of the ship is very much congested, and it is extremely difficult to find any space there for either doctors or wounded. But when we look into history, when we look back to our forefathers, who were not squeamish men but who were most courageous, we find that in action there was a most earnest desire both on the part of the men who remained intact and on the part of the wounded themselves, to get every man who was hit below out of fire. They were got down into the cockpit, a horrible place, which has been so well described to us, but though it was horrible, it was safe. So there is in the present day, the same sort of earnest desire to get the wounded down to safety under the armoured deck. But when we try to do it, we find it is most difficult if not impossible. When a ship is prepared for action, the one idea is to have but few hatches in the armoured deck so as to keep her afloat, and the design of a ship is arranged so as to give the men who are fighting the guns as much protection from harm as is possible, without exceeding some moderate amount of weight devoted to armour. The result is that the modern turret or casemate is made as small as possible, and it has the smallest possible communication with the armoured deck below, that communication

being made just big enough to bring up the ammunition, while outside the turret or casemate all is unarmoured. Thus most of the men will be behind armour and absolutely cut off from getting below except down the very small tube that brings up the ammunition. A man with all his senses about him and a bit of a gymnast will find it very difficult to get down that tube, and if he is wounded it will be out of the question. Now, what has been suggested by Dr. Randall? He suggests that some spaces should be found between or in rear of the casemates but outside them, where dressing stations might be established. Any officer who has seen one of the ships that have recently been made targets of, and remembers what happened outside the turrets or casemates of those ships, would see what that proposal is worth. It is an absolutely hopeless thing. The blast of a shell takes everything movable outside the casemate, and would throw the whole thing into a great heap. You would have rags of wounded men, you would have little pieces of a doctor, and you would have all the fittings, instruments, and dressings mixed up in one heterogeneous pile. That would do nobody any good. You cannot have a dressing station under those conditins. The only thing, as Dr. Lloyd Thomas has said, that is at all practicable is, that the men must remain where they are, behind the armour near the guns, and there they must be treated by those who have been instructed in first aid. We must keep our doctor safe as far as possible, so as to have him at the end of the action. The captain will decide what is the safest place to put him in; but the doctor will have instructed a percentage of the petty officers or other intelligent men how to help temporarily the men wounded at the guns, and after the action they will have to be removed to the best place available—possibly into a hospital ship, possibly to some other ship that is not much knocked about—some cruiser that has not been in the action; but during the action I can see no way of removing the wounded with any possibility of safety—they will have to be treated at the guns themselves.

Staff-Surgeon ARTHUR GASKELL, F.R.C.S., R.N. :—It seems to me, that, as Dr. Lloyd Thomas has said, the lecturer has not brought out anything very new. I think we have all of us recognised for years past how much use hospital ships would be. I have studied the subject lately a good deal, and I have come to the conclusion that a hospital ship should not be a converted ship, but should be a ship absolutely built for that purpose. My reason for saying so is that I have tried to plan out how a ship that has been built for other purposes could be converted into a hospital ship, and I have found that it practically came to pulling everything out of the inside of the ship, cutting large windows in the side of the ship so as to let in more light and air, and then building, as it were, a hospital inside that shell. Having to do all that, one would think that possibly it would be simpler to start by building that shell into more of a shape which would approach the shape of the wards that you wish to have. As regards treating the wounded after an action, it seems to me that that idea of "striking them down" on boards or stretchers, or in canvas buckets, as we have all of us tried to do so often in General Quarters, is absolutely a farce. It always gives one the impression of being a sort of pretence at being busy; but every thinking doctor who has gone through this clownish pantomime must have always felt that he would never dream of doing it if he were actually in action. I think the majority of doctors in the Navy have come to the conclusion that when the action is being fought the men must lie where they fall. I do not like the idea of locking up the doctor down below. I think you might have a few extra doctors in hospital ships

who could be sent to the ship after the action, but the doctor on board the ship most certainly ought to be running all about the upper deck, and the fighting parts of the ship, putting on tourniquets and temporary dressings. His work would chiefly be putting on tourniquets. One last suggestion I should like to make is that the staff of the doctor should not consist purely and simply of the chaplain and accountants who are so often made out to be his sole assistants. I think every man, or certainly every petty officer, on board ought to be compulsorily taught first aid to the wounded, and then he, as the captain of the gun or whatever he might be, would be able to put a tourniquet on a mate, or on himself, if necessary. In China, when the wounded were brought down to the hospital where I was serving, I asked them various questions about what they did when they were wounded, and what they felt like, and so on, and the thing that struck me was that actually the first dressing put on was often their own puggaree, which was put on by themselves. Then along would come the doctor, who would apply some better dressing and put the man on a stretcher and have him carried out of action. It seems to me that the wounded man, whether it is in army fighting or in navy fighting, will very likely have to attend to himself in the first moments.

Staff-Surgeon W. A. Whitelegge, B.A., M.D., R.N. :—I have listened with very much pleasure and with the deepest interest to Dr. Randall's lecture and also to the very able and eloquent discussion to which it has led. I beg to add my remarks and to confirm the opinions of Fleet-Surgeon Lloyd Thomas and Staff-Surgeon Gaskell, in reference to the treatment of the wounded immediately after an action. I have never been in an action at sea, and I hope I never shall—I am not sighing for that experience; but the picture that has been depicted by Dr. Randall in his lecture is certainly one to give one the creeps, as we may say. However, I hope it will not be as bad as he has made it out with the wounded, the dying, and the living being covered with gore. During the action, to leave the men as they fall seems and sounds inhuman, but I think it ought to be impressed on every man, from the officers downwards, that they should know how to apply tourniquets and how to stop hæmorrhage in the first instance. A great deal can be done in this way if any medical officer chooses himself to take up the post of instructor to his men. I have done it with the greatest success. I do not say that the men are actually doctors, but I certainly say that those who have been through the instruction know how to put on a tourniquet properly, and the greatest possible benefit, I am sure, will accrue from that in time of action. As regards hospital ships, the Admiralty have, I believe, taken this point a great deal into consideration. We have got the hospital ship "Maine," and I believe she is giving a very great deal of satisfaction in the Mediterranean. I think that even in time of peace it would be an advantage to have a special hospital ship attached to each fleet—not to have one hurriedly commissioned at the time of war, which would be very awkward, because then there would be all the fitting out necessary, and the appliances to be gathered at the last moment—not to mention other details which are essential to a properly equipped hospital ship.

Dr. Randall, in reply, said :—One thing I am bound to confess is, that as my old friends Dr. Lloyd Thomas and Dr. Gaskell said, there is nothing new about my paper. I may say that it is seven years ago now since I first drafted the paper out, and it is nearly seven years since I first

suggested reading it at this Institution, but it is not until now that I have been free to do so. I am quite well aware that there is nothing new at all in the idea; but at the same time it is not perhaps untimely to bring it forward just now. In the December (1902) number of the JOURNAL of this Institution there is a translation by a distinguished naval medical officer of a long paper, by one of the chief surgeons in the French Navy, in which the author distinctly goes back and strongly recommends the disposing of the wounded below the armoured deck. I think that it would be absolutely criminal to put wounded men down below the armoured deck. Admiral May, in what he said about the building of ships, told us how everybody is fighting for space below the armoured deck—so they are—everybody except the doctor. He gets no chance at all, and is not thought about; yet they want to shut him down there in passages and places where no one else wants to go. As regards my unfortunate suggestion as to the use of casemates, my idea was simply and solely that as the casemates of the secondary battery are the only armoured parts of that portion of the ship, they might in some small measure act as a sort of screen, so that you might have behind each casemate a small dressing station. The medical officer, I think, must take his chance and be free to move about. Take the case of wounds of large blood-vessels. It is then a question of moments, it is not a question of waiting for a few hours till the action is over. As to the unfortunate sailor, like everybody else on board the ship he must take his chance; but whatever can be done to give him when wounded some screen, the armour of the casemate, for instance, would be a very great advantage, for you would have the man on the upper deck and not below, and you would thus be able to get him quickly out of the ship when chance offered. There was one suggestion I forgot to notice in the paper. This was one made by Mr. Wilson in his work on "Ironclads in Action." He refers there to the subject of what to do with the wounded, and recognises the enormous difficulties there are in dealing with them. It occurred to him that every man ought to go into action with a life belt on, and that when he is wounded he should be dropped overboard: If I were wounded in a ship, I would much sooner be dropped overboard than go below the armoured deck. At all events the sea water is clean, and will keep the wounds clean; a man would, therefore, get a better chance in every way, for when the boats were about he would be picked up and taken to the hospital ship, but if he were below the armoured deck lying helpless in one of the wing passages or the barbette flats, he would be like a rat in a trap, if the ship went down. I had not time to refer to it—the paper was already too long—but it is a very important point that the crew should have thorough instruction in first aid, the captains of guns and their men especially. This instruction must be made compulsory. The use of hospital ships for conveyance of invalids was intended to apply to military invalids who at present have to travel in troop-ships. I thank you all for your very kind remarks with regard to the paper.

The CHAIRMAN (Sir Henry G. Howse, President of the Royal College of Surgeons):—In the first place as regards the character of the wounds and the picture which has been drawn of a ship after a naval action, I am afraid it is in no way exaggerated by the writer of the paper; even Dr. Lloyd Thomas himself, I think you will agree with me, drew as lurid a picture as ever the reader of the paper did. I am of course a landsman and I know nothing about naval affairs, but when you remember the character of the wounds which will be caused in naval actions in the future, I think you will say that Dr. Randall has not exaggerated. When

you remember the character of shell wounds—the horrible lacerations which they produce—infinitely worse than any rifle fire, infinitely worse than any wounds inflicted with the bayonet or the sword—you will realise that the character of the wounds in naval actions will be of the same kind. A shell strikes a ship's plate, there is metal flying about, and the character of the wounds will be lacerations cruel and horrible. I do not think that in any way the lurid picture which has been drawn of the results of these actions has been over-stated; and I should be inclined to agree with those who say that during a naval action, the wounded will have to lie where they fall, and that anything that can be done for them must be done simply by the aid of those around them. The importance of the suggestion that everybody on board ship should be trained in first aid is not in the slightest degree over-stated. I think it ought to be a cardinal point in the future in the training of all the men; it is a part of their own interests, sailors and marines alike, that they should be trained in the principles of first aid. That the sailors have a great deal to do is true; but the sailor is a handy man, and he is a very quick man, and apt to learn, and he will very soon acquire the necessary information and the necessary manipulations—and they are very few—simple tourniquets are perhaps some of the most important, and the firm bandaging of the wounds so as to prevent hæmorrhage. What you want is to prevent the wounded man dying straight off, before a doctor can attend to him after the action is over; and such means can be very readily learnt, I am sure, by the crew of a vessel. It is impossible for the doctor to be running about attending to all the wounded, and therefore without this first aid many of the wounded must die before the doctor reaches them. With regard to the suggestion of a hospital ship, I feel quite certain myself that that is a right suggestion, but I am not quite so certain that the idea of converting the Atlantic liners and similar vessels for hospital purposes will be so advantageous as has been thought. As Dr. Gaskell mentioned, when you come to convert one of these vessels into a good hospital ship, you may have to effect most immense alterations in her. However, it might be tried, and I suppose it has already been partly carried out. It seems to me that there should be one or two model hospital ships constructed with hygienic arrangements suitable for operations and for the treatment of the wounded after a battle; and that they should serve as types subsequently for the construction of other ships, and for the alteration of cruisers or of Atlantic liners. A good deal would be learnt at least in that way if some such ships were constructed. Then we must recollect also that the suggestion of hospital ships must be *an addition* under any circumstances to the requirements necessary for the treatment of the wounded at the present time. The paper leaves out of account altogether the fact that there will be duels between ships in the future just as there have been in the past, and you cannot have a hospital ship accompanying every cruiser or every line-of-battle ship that goes out. Therefore there must be arrangements made in each individual ship for the treatment of the wounded. Still that it would be an advantage to have a model hospital ship constructed I feel no doubt about at all. I am speaking, of course, as one utterly inexperienced, and I feel an apology is due to you for my occupying the Chair on the present occasion. I am a landsman of landsmen, and I think you may laugh at me for venturing to say anything about this. Still, I know something about wounds, although I do not know much about the construction of ships, and I cannot help feeling very grateful to Dr. Randall and to all of you who have come here this afternoon, and expressed your opinions as you have done. I am sure the discussion has been a really very much better discussion than the meeting has been a meeting as regards

numbers. I congratulate you all, and I am very glad indeed to have had the honour of presiding on this occasion.

Admiral Lord Charles Scott, G.C.B. :—I beg to propose a vote of thanks to Sir Henry Howse for presiding to-day. It is a great honour to us, I think, that so distinguished a man as the President of the Royal College of Surgeons should find time among the many pressing engagements that he must have, to come and preside over a meeting of this Institution; and we are all deeply indebted to him for doing so this afternoon. I am sure that when he talks about his ignorance of naval matters, many of us could hardly believe it from the way in which he spoke upon the subject before us to-day. He spoke on it as clearly and distinctly as any naval medical officer could have done. The details of ships are beyond many people—even naval architects sometimes fail in their architecture—and so I am sure if a medical man pleads that he does not know all the details of the building of a ship, he is in very good company indeed.

CAMPAIGNS AGAINST INDIA FROM THE WEST AND THROUGH AFGHÁNISTÁN.

Translated and condensed from the Russian of Major-General L. N. Soboleff, by Lieut.-Colonel W. E. GOWAN, Retired, Indian Army.

(Continued from June JOURNAL, *p. 690.)*

ON the 7th of the month *Shabán* (corresponding with the middle of April, 1527 A.D.), Bábar received intelligence that a Bengal army, under the command of *Makhdum-i-Alam*, consisting of 24 divisions, had entrenched itself on the banks of the river Gandak, and that it had there been joined by a force of Afgháns, under the command of Sultán Máhmúd. On the 9th of the same month, Bábar's troops pitched camp at Arrah. Here news was received that a Bengal army, which had been raised in Kerid, or Harid—the country (between Sikandarpur and the Ganges) which is watered by the Gogra—had embarked on 150 boats that were anchored on the left bank of the Siru,[1] at the point where that river falls into the Ganges.

On the 17th of the month *Shabán*, Bábar undertook a reconnaissance, with a view to finding a suitable place for crossing over to the left bank of the Ganges, in order to join forces with his son, Askari. He was at this time aware that the Bengalis had decided upon disputing the passage of the Siru at Geldi (Haldi-Ghát).[2] But, as he records in his Memoirs:—"I had information as to all the points between Sikandarpur[3] (or Iskandarpur) and Bahráj, at which the Siru river can be crossed. I accordingly directed a portion of my army to at once pass over in boats, and advance upon the enemy, and that as soon as this force had carried out this movement, my other troops, under Ustád Ali and Mustafa, were also to engage the enemy. By that time I would be ready to cross the Ganges with my reserve troops, and to take advantage of any development that might occur." The reach of the Ganges, in the direction of the upper course of the Siru river, runs from south to north, so that Bábar's position was in the shape of a bow, with its convex side turned towards his enemy.

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[1] See note on page 687 June JOURNAL, under Siru.—W.E.G.

[2] Ghát is the common name of a landing-place on a river bank. This Haldi-Ghát was probably the name of a ford across the Siru or Gogra.—*Leyden & Erskine.*

[3] Iskandarpur, on the right bank of the Gogra, about 20 miles above its junction with the Ganges.—*Ibid.*

As Bábar rarely mentions the numerical strength of the several armies which he commanded, we are unable to accurately determine the total strength of the force with which he was operating along the Siru and Ganges rivers, but we shall probably be not far from the mark if we put its strength down at not less than 150,000 men.

On the 23rd of the month *Shabán* (corresponding with the end of April or the beginning of May, 1529 A.D.), Bábar's army, under his personal command, began to cross from the right to the left bank of the Ganges, where it was to take up its allotted position.

It was at this time that Bábar received the news that his son, Askari, had crossed the Siru river, and had attacked the enemy, whereupon he at once directed his several detachments, which had crossed the same river higher up, to join Askari's column and to cooperate with it in the aggressive movement. To attack *en masse* was Bábar's undeviating rule in all his great engagements.

We will here give a brief summary of the engagement which terminated Bábar's strategical movement on the banks of the Siru and Ganges rivers:—

1. Prior to the fight, Bábar's several forces were divided by the river Ganges, but before the engagement opened, Bábar had successfully concentrated the bulk of his entire army on the left bank of the Ganges.
2. The position which Bábar took up was exceedingly well chosen. In respect of defence, it had a strong front, its right resting on the Ganges, its left flank being secured by Askari's army. As regards its offensive capabilities, it admitted of a turning movement on the enemy's right flank.
3. Bábar's dispositions were simple and concise. In order to turn the left flank of the Bengalis, he had massed 75,000 men, or half of his entire army, and in order to facilitate this turning movement he had mounted his infantry.
4. His artillery had been so posted as to search out the enemy's front with a hot fire, and to facilitate the passage of his main body across the Ganges.
5. The passage of this river was so timed, that it had been virtually carried out on receipt of the news that the enemy had been attacked by his flanking columns.
6. The attack of these flanking columns was effected by means of a converging movement, which admitted of Bábar's whole army being united and thus in a position to reinforce the different points along the course of the river.
7. The troops, under their several commanders, were in their allotted places immediately the river had been crossed.
8. Askari's column had been connected with the other parts of Bábar's army before battle was offered.
9. Bábar had kept in hand a considerable reserve of fresh forces, for when the engagement was over a large body of his men was still crossing the river.

When Bábar began his campaign in Bengal, he had three principal enemies:—Firstly, the Bengalis, incited by the Afgháns of the *Purab*;

secondly, Sultán Mahmúd, son of Iskandar, a former Emperor of India, who wished to secure his father's throne: and lastly, the Afgháns of the *Purab*, under the leadership of Babin, and Sheikh Báyázid. The defeat of these combined forces on the bank of the Siru or Gogra river produced a great impression on the neighbouring provinces, and did much towards quieting the turbulent Afgháns, for many of their leaders now came in and made their submission. Amongst the number was Ilawal Khán Lohání, who made Bábar an offer of the services of 8,000 men.

We have more than once observed in our review of the several campaigns against India, that almost every conqueror, who has carried war into the heart of Hindustán, has there found allies, and that the armies of many of the invaders of that vast country, peopled as it is by diverse and antagonistic races, have almost always increased in size instead of diminishing in proportion as a resolute advance has been effected. Such is the authentic demonstration of history, and any future subjugation of India from without will probably meet with the same experience.

On the 10th of the month *Ramazán*, the Bengalis sent word that they would assent to the conditions of peace which Bábar demanded of them, and peace was accordingly concluded.

Having settled matters in Behár and Bengal, and having pacified most of the recalcitrant Afgháns, Bábar marched his army back towards Agra. But as Babin and Sheikh Báyázid had not yet come to terms, he resolved to take them *en route*. On the 17th of the month last named, Bábar received intelligence that the combined forces of these two enemies had crossed the Siru and Gogra rivers and were advancing on Lucknow. Although the rainy season had by this time set in, he at once sent off a strong force in pursuit, and on the 18th he himself crossed the Siru[1] river, and the next day arrived at Sikandarpur, when he heard that Lucknow had been unsuccessfully attacked by his enemies. Bábar then advanced along the Siru river and, having crossed it at the Chouparah-Chátarmuk passage, entered Oude. For a long time his opponents held their own, but at length, on the 12th of the month *Shawal*, they, after re-crossing the Ganges and falling back *viâ* Dilmu (on the Ganges, south-east of Bareilly) upon Jaunpur and Chunár, were hopelessly defeated and hotly pursued by large bodies of Bábar's very mobile cavalry forces. As soon as he had himself reached the district of Kálpi,[2] Bábar sent orders to his pursuing troops, whose horses were by this time completely jaded, to halt where they were, when he would send fresh cavalry details from Agra to relieve them.

In a few days' time, Bábar, after a march of 170 miles, *viâ* Biladar, Saugandpur, Etáwah, and Fatehpur, returned to his capital at Agra, where he was soon rejoined by Humáyun's mother, who had come from Kábul.

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[1] Owing to confused orthography and to want of large-scale maps, it is almost impossible to trace Bábar's military operations in this part of India.—W.E.G.

N.B.—This river, also called the Sárju, or Perseru, seems to be chiefly formed by effluents from the Gogra below Murádganj.—*Leyden & Erskine.*

[2] The town of this name was then of considerable size and stood not far from the right bank of the Jumna, between Agra and Allahábád.—*Leyden & Erskine.*

"The Great Mogul" had now no more enemies worthy of the name who were at all able to compete with his troops. Although not by any means at this time an old man, the amazing energy and unwearied activity which he had displayed from his earliest years had laid their mark even upon his iron constitution, and his end was fast approaching. Indeed, the circumstances attending his death are as remarkable as the history of his active life. In his immortal Memoirs, Bábar himself tells us of the cause of his last illness, and of his presentiment of approaching death. His favourite son, Humáyun, the heir to his throne, a misanthrope and a dreamy individual, all at once made his appearance at Agra from Badakhshán, to the great surprise of both his parents. After a stay of a few days at Agra, Bábar directed him to go to Sambhal, where he fell ill, whereupon he was brought to Delhi, and thence to Agra. Everything was done for him that could be done, but apparently without avail. One of Bábar's personal attendants then counselled his master to offer to God a sacrifice of some valuable thing, and to pray for his son's recovery. On the suggestion being made that he should offer as a propitiation the priceless diamond,[1] which had been seized when he had captured Agra, Bábar exclaimed, "What! does there exist upon this earth a jewel which is of equal value with the life of my own son? No, the ransom that I must offer for his life must be my own!" Bábar, we are told, then entered the room, in which Humáyun was lying, and as he circled round [2] his bed three times, he cried aloud, "I take upon myself all the sufferings which thou endurest." It is related that Bábar had no sooner performed this exorcism, and had pronounced these words, when a sense of heaviness came upon him, whilst his son's health began to improve. Soon after this, whilst Humáyun completely recovered, Bábar himself became seriously ill. Summoning to his bedside his highest officials, and the most influential persons of his empire, Bábar feelingly proclaimed his son, Humáyun, as the heir to his throne, and invited them all to give him their allegiance.[3]

On the 6th of the month *Jamádi-al-Awal*, in the 937th year of the *Hijra* (corresponding with the 26th December, 1530 A.D.), Bábar terminated his famous earthly career.

Bábar undoubtedly belongs to the number of the greatest sovereigns and army leaders that the world has ever seen, especially when we consider the means with which he had to work, and the age in which so great a star arose. If we compare his achievements with those of his contemporary sovereigns, not only in Asia, but in more enlightened Europe, the palm of priority, in every respect, must certainly be given to him. His wars did not lead to destruction, but to building up. An exalted view of politics, an honourable display of

[1] Supposed to be the famous "Koh-i-Nur."—W.E.G.

[2] It is customary among the Mussulmáns, as it was amongst the Jews of old, to wave presents of money or jewels thrice round the head of the person to whom they are offered, on particular occasions, such as betrothals, marriages, etc. There is supposed to be something sacred in this rite, which is believed to avert misfortune.—*Leyden & Erskine*

[3] This Humáyun secured through the influence of Bábar's Prime Minister, Nizám-ed-Din Ali Khalifa.—*Leyden & Erskine.*

ambition, great skill as an administrator, the possession of the power of improving, in a comparatively brief period, the welfare of his subjects, his own deep respect for all laws which he imposed upon others, laws which secured the honour, integrity, and happiness of all peoples entrusted to his charge, a gracious demeanour to those around him—an attribute which exalts a monarch—these were the principal features of the man both as a politician and as a sovereign. As an army leader, he possessed, in a marked degree, all the qualifications of a great strategist and tactician. He possessed, too, the gift of binding with his own the heart of every soldier and officer under his command, by sharing their joys and sorrows, and by convincing them that, whilst fighting under his standards, victory was not far off. Apart from all this, Bábar was a man of the highest culture, for as a *savant*, and especially as a writer, he has won for himself a great name in the history of the world. He set a high value on science, and he surrounded himself with, and reckoned amongst the number of his personal friends, those who were in like manner interested in its pursuit. His indomitable will and courage surmounted every obstacle that came in his way. His cheery disposition, his unfailing good nature, his rectitude and kindliness of heart, won for him the love and respect of his numerous subjects of many races and forms of religious belief.

To supplement General Soboleff's review of the career of Bábar which terminates here, the following interesting particulars concerning this remarkable man, taken from "The Concluding Supplement to Bábar's Memoirs," on pp. 426-432 of Leyden & Erskine's Standard English Edition, are here given:—[1]

"Bábar communicated his dying instructions to Khwájah Khalifa, Kambar Ali Beg, Terdi Beg, and Hindu Beg, who were then at Court, commending Humáyun to their protection. With that unvarying affection for his family, which he showed in all the circumstances of his life, he strongly besought Humáyun to be kind and forgiving to his brothers. Humáyun promised, and, what in such circumstances is rare, kept his promise. The request, however, which Bábar made to his

[1] Memoirs of Zehir-ed-Din Muhammad Bábar, Emperor of Hindustan, written by himself, in the Jaghatai Turki, and translated, partly by the late John Leyden, Esqre., M.D., partly by William Erskine, Esqre., with Notes and a Geographical and Historical Introduction: together with a Map of the Countries between the Oxus and Jaxartes, and a Memoir regarding its construction, by Charles Waddington, Esqre., of the East India Company's Engineers. London: Published by Longman, Rees, Orme, Brown, and Green, Paternoster Row; and Cadell & Co., 10, Prince's Street, Edinburgh. 1826. Pp i. to lxix., and Pp. 1 to 432 (*without* Index).

N.B.—The Memoirs of the Emperor Bábar were written in the Jaghatái or Chaghatái Turki, which was his native language.

These Memoirs may be divided into three parts, the first extending from his accession to the throne of Farghána, to the time when he was finally driven by Sheibáni-Khán, the Uzbak, from his paternal kingdom, a period of about twelve years; the second reaching from his expulsion from Farghána to his last invasion of Hindustán, a period of twenty-two years; and the third containing his transactions in Hindustán, a period of little more than five years.

nobles was heard, as the requests of dying princes generally are, only as a signal for faction."

"Khwájah Khalifa—or, to give him his full title, Nizám-ed-Din Ali Khalifa—Bábar's Prime Minister, who possessed the chief authority among the Tûrki nobles, had conceived a strong dislike to Humáyun, in consequence of some circumstances which are not explained, so that the Court of the expiring conqueror became the scene of intrigue and *cabal*."

. . . "Bábar, in the midst of these intrigues, with which he was probably unacquainted, expired at the *Chahár-Bágh*,[1] near Agra, on the 6th of the month *Jamádi-al-Awal* A.H. 937, corresponding with December 26th, 1530 A.D., in the 50th year of his age, and the 38th year of his reign [dating from the accession to the throne of Farghána]. His body, in conformity with a wish which he had expressed, was carried to Kábul, where it was interred in a hill that still bears his name.[2] Bábar had reigned five years over part of Hindustán."

"Humáyun ascended the throne on the 9th of the same month (Muhammadan) without opposition, because of the influence of Khwájah Khalifa." . . .

"Bábar, at the time of his death, had seven children alive, four sons and three daughters. . . The eldest son, Nasir-ed-Din-Muhammad-Humáyun, succeeded him as supreme Emperor in all his dominions. Humáyun, on his accession, gave to his second brother, Kamrán Mirza, the Panjáb, in addition to the government of Kábul and Kandahár, which he already held; to Hindál Mirza he gave the country of Mewát (a tract of country in the neighbourhod of Delhi); and to Askari he assigned the province of Sambhal (Rohilkand), which he had himself held. All these princes acted a conspicuous part in the confusions of the succeeding reign." . . .

"Zahír-ed-Din-Muhammad Bábar was undoubtedly one of the most illustrious men of his age,[3] and one of the most eminent and accomplished princes that ever adorned an Asiatic throne. He is represented as having been above the middle size, of great vigour of body, fond of all field and warlike sports, an excellent swordsman and a skilful archer. [From a passage in another part of the Memoirs it is evident that Bábar was a powerful swimmer.—W.E.G.] Having been early trained

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[1] *Chahár-Bágh* is the general name given to a garden laid out in *four* plots or squares, with a pavilion. They are very common throughout the East.—W.E.G.

[2] This hill, bearing south-west of Kábul, is known as that of *Bábar-Bádsháh*.—W.E.G.

[3] He was born on the 6th of the month *Muharram* A.H. 888, corresponding with the year 1483 A.D. He begins his Memoirs thus: "In the month of *Ramazán* A.H. 899, and in the twelfth year of my age I became King of Farghána." This period corresponded with 6th June, 1494 A.D., or the year of Charles VIII.'s expedition to Naples. Bábar ascended the throne of Farghána about two years after the discovery of America by Columbus, and four years before Vasco de Gama reached India. His contemporaries in *England* were Henry VII. and Henry VIII.; in *France*, Charles VIII., Louis XII., and Francis I.; in *Germany*, the Emperors Maximilian and Charles V.; in Spain, Ferdinand and Isabella, and Charles. . . . The rise and progress of the Reformation formed the most interesting event in Europe during the reign of Bábar.—*Leyden & Erskine*.

to the conduct of business, and tutored in the school of adversity, the powers of his mind received their full development. Before he had attained his 20th year he had shared every variety of fortune, having been alternately hailed and obeyed as a conqueror and deliverer by rich and extensive kingdoms, and forced to lurk in the deserts and mountains of his native kingdom as a houseless wanderer. Down to the last dregs of life, we perceive in him the strong feelings of an affection for his early friends and early enjoyments, rarely seen among princes. . . . Of his companions in arms he always speaks with the frank gaiety of a soldier; and it is a relief to the reader, in the midst of the pompous coldness of Asiatic history, to find a king who can weep for days, and tell us that he wept, for the playmate of his boyhood. Indeed, an uncommon portion of good nature and good humour runs through all his character, and even to political offenders he was, in a remarkable degree, indulgent and forgiving."

"In the character of the founder of a new dynasty, in one of the richest and most powerful empires on earth, we may expect to find an union of the great qualities of a statesman and general; and Bábar possessed the leading qualifications of both in a high degree. . . But his superiority over the chiefs, to whom he was opposed, arose principally from his active disposition and lively good sense. Ambitious as he was, and fond of conquest and of glory in all its shapes, the enterprise, in which he was for the time engaged, seems to have absorbed his whole soul, and all his faculties were exerted to bring it, whatever it was, to a fortunate issue. His elastic mind was not broken by discomfiture, and few princes, who have achieved such glorious conquests, have suffered more numerous or more decisive defeats. His personal courage was conspicuous during his whole life, but it may be doubted whether, in spite of his final success, he was so much entitled to the character of a great captain, as of a successful partisan and a bold adventurer. In the earlier part of his career, his armies were very small. Most of his expeditions were rather successful inroads than skilful campaigns. But he showed a genius and a power of observation which, in other circumstances, would have raised him to the rank of the most accomplished commanders. As he had the sense to perceive the errors which he committed in his earlier years, so, with the superiority that belongs to a great mind, conscious of its powers, he always readily acknowledged them. His conduct, during the rebellion of the Moghuls at Kábul, and the alarm of his army in the war with Rána-Sanka, bears the indications of the most heroic magnanimity. The latter period of his life was one uninterrupted series of successes."

"But we are not to expect in Bábar that perfect and refined character which belongs only to modern times and Christian countries. Thus we sometimes see him order what, according to the practice of modern warfare, and the maxims of a refined morality, we should consider as cruel executions. We find him occasionally the slave of vices, which, even though they belong to his age and country, it is not possible to regard in such a man, without feelings of regret. We are disappointed to find one possessed of so refined an understanding, and so polished a taste, degrading both, by an obtrusive and almost ridiculous display of his propensity to intoxication. . . We turn from Bábar, the slave of such vices, which probably hastened on a premature old age, and tended to bring him to an early grave, and view him with more complacency, encouraging, in his dominions, the

useful arts and polite literature, by his countenance and example. . . . . No region of art or nature seems to have escaped the activity of his research. He had cultivated the art of poetry from his early years, and his collection of Turki poems is mentioned as giving him a high rank among the poets of his country. . . . He also wrote a work on Prosody, and he was skilful in the science of music, on which he wrote a treatise. But his most remarkable work was, undoubtedly, the Memoirs of his own life in the Turki tongue. The earlier part of these Memoirs was written with great spirit, and the whole bears strong characteristics of an ingenious, active, and intelligent mind. No history, perhaps, contains so lively a picture of the life and opinions of an Eastern prince. The geographical descriptions which he gives of his hereditary kingdom, and of the various countries which he subdued, have, what such descriptions seldom possess, not only great accuracy, but the merit of uncommon distinctness. These Memoirs, however, will be found of unequal value, according to the periods of which they treat. Some years, particularly in the later periods of his life, they present little more than a dry chronicle of uninteresting events, probably written down as they occurred, and never re-written, as those of the earlier period certainly have been. It probably was his intention to have connected the whole, and compiled them in the same strain of happy narrative that runs through the first half of them, a design which it is to be regretted that he did not live to execute."

"A striking feature in Babár's character was his unlikeness to other Asiatic princes. Instead of the stately, systematic, artificial character, that seems to belong to the throne in Asia, we find him natural, lively, affectionate, simple, retaining on the throne all the best feelings and affections of common life. . . . These characteristics, as well as the simplicity of his language, he owed to his being a Turk. That style, which wraps up a worthless meaning in a mist of words, and the etiquette which annihilates the courtier in the presence of his prince, were still, fortunately for Bábar, foreign to the Turki race, among whom he was born and educated."

"Upon the whole, if we review with impartiality the history of Asia, we shall find few princes who are entitled to rank higher than Bábar in genius and accomplishments. His grandson Akbar may, perhaps, be placed above him for profound and benevolent policy. The crooked artifice of Aurangzib is not entitled to the same distinction. The merit of Chingiz-Khán, and of Tamerlane, terminates in their splendid conquests, which far excelled the achievements of Bábar; but in activity of mind, in the gay equanimity and unbroken spirit with which he bore the extremes of good and bad fortune, in the possession of the manly and social virtues, so seldom the portion of princes, in his love of letters, and his success in the cultivation of them, we shall probably find no other Asiatic prince who can justly be placed beside him."

Before leaving the subject of Bábar and his wonderful life record there is a curious and interesting piece of information worthy of notice which is given in the fully annotated joint work of Messrs. Leyden and Erskine, who, in a footnote on page 236 of their English version of Bábar's Memoirs, take exception to Bábar being called "the founder of the dynasty of the Great Mogul in India." They say:—"They [the Moguls] do not appear ever to have co-operated heartily with Bábar, who always speaks of them and their race with strong marks of dislike

and resentment. Under these circumstances, it must seem one of the strangest caprices of fortune that the empire, which he founded in India, should have been called, both in that country and by foreigners, "the Empire of the Moguls," thus giving it the name of a race which Bábar himself detested. This arose, not so much from his being a descendant of Chingiz-Khán, as from his being "a foreigner from the north"; for from the age of Chingiz-Khán downwards, all Tartars and Persians, *in the loose colloquial language of India*, seem to have been denominated "Moguls."

As bearing upon the researches into ancient history of General Soboleff and other Russian officers, who hold the opinion that the invasion of India is still practicable by the same routes as those followed by all former conquerors down to Nádir-Sháh, the Persian, it may be useful to conclude with an extract from Professor Stanley Lane-Poole's work, headed "Rulers of India—Bábar."[1] "*Famous throughout the world for warlike praise*" . . "the youth, who had twice taken and lost Samarkand, and had thrice wandered a penniless exile among the shepherds of the hills of his native land, came out of the Afghán passes by the immemorial road of conquest, and founded an Empire in India which lasted, in the hands of his descendants, first in glory, and then in dishonour, down to our own days. From Samarkand to Kábul, and from Kábul to Delhi, has been the road of conquest time after time; until at last another road was ploughed upon the seas, and the Afghán gates were barred by a new race from the islands in the West" (pp. 88 and 90).

Bábar died, as we have seen, at the age of 47, in the fulness of his power, and whilst still in that period of life in which, had he been spared, he might have performed still more remarkable deeds. His unusual talents, his incontestable genius, had enabled him to establish in India a great dynasty. The blow, indeed, which Bábar had inflicted on the Indian Empire was so powerful that, during his lifetime, no one was sufficiently strong to dispute his right as absolute monarch over the greater part of the vast peninsula, which is watered by the Indus and the Ganges rivers.

He was succeeded by his son, Humáyun, who, though not destitute of ability, was unable to comprehend the true position of affairs, and instead of following in his father's steps and acting with decision with a view to consolidating the power to which he had succeeded, occupied himself with astronomy and with building no less than seven palaces, in one or other of which he passed almost the whole of his time. As a natural result, his brothers and the descendants of the former dynasties of India took advantage of this display of weakness, and a civil war ensued, which led to his ultimate overthrow. Besides the quarrels with his brothers, Humáyun ere long became involved in disputes with the Afghán settlers in Behár, and in 1539 was driven out of that province. In the following year he suffered another defeat in an encounter with Sher-Sháh, near Kanouj, and was forced to fly to the desert of Sindh. In 1541 he went to Umarkote, a place on the Indus, where he married a Persian lady named Hamida Bégum, who, in the following year bore him a son, afterwards well known as Akbar,

[1] Oxford Clarendon Press: 1899. Pp. 206, with Map of India and Trans-Oxiana: Sketch of Bábar, from an Indian drawing of the sixteenth century, and Index.

Emperor of India. From Umarkote Humáyun fled to Persia, where he was hospitably received by the Sháh.

Meanwhile, almost unimaginable chaos set in over India, for, in the course of nine years, five emperors succeeded to the throne. At length, with the aid of the Sháh of Persia, Humáyun entered into relations with a dissatisfied party of Afgháns, and in the year 1554 succeeded in once more gaining the throne of India. But misfortune still followed him, and in the following year he died from the effects of a fall from a building, which is still shown in a part of old Delhi, near which his remains were buried. He was succeeded on the throne of India by his son Akbar, then a boy of 13. Akbar reigned for 49 years, and his rule was so famous that Eastern historians have well called him "Akbar the Great." Whilst distinguished for his administrative talents and for his high moral qualities, he was remarkably brave, and he also possessed in a marked degree the power of self-control. His benevolent and kindly disposition, coupled with a certain outward severity of demeanour, enabled him to protect the Jesuits, who visited India during his reign. He possessed to perfection that which is perhaps the highest quality of a sovereign, the art of selecting fit persons to fill the highest offices in the State. He paid especial attention to the inauguration of all measures having for their object the furtherance of the welfare of his subjects. He established a regular system of judicature, and divided his Empire into *parganahs* (districts), *sarkáris* (governments), *subahs* (provinces), and placed capable men over each. In Akbar's time, the Indian Empire was parcelled out into 22 provinces, viz., Kandahar, Ghazni, Kábul, Kashmir, Lahore, Multán, Utch (?), Sindhia, Ajmere, Sirhind, Delhi, Doáb, Agra, Allahábád, Oude, Behár, Bengal, Orissa, Málwa, Berár, Candeish (Khándesh), and Gujerát, and it extended from north to south 17°, and from west to east 25°. Its population exceeded 120,000,000 souls. Its revenue amounted to about 80 *crores* of rupees.[1] The army had a numerical strength of 300,000 men. Such were the results of the half-century reign of Akbar. But what, above all, made it the most remarkable was the religious tolerance which distinguished it. Akbar, indeed, displayed uniform respect for both the religion of Mussulmáns, and that of the Bráhmins, and, for this reason, he enjoyed the general love of his subjects. *The dynasty which had been set up by Bábar had become firmly established in India, but, at the same time, the influence of Europeans in that country had also begun to be securely set up.*

On the death of Akbar, his son, Jahangir (otherwise known as Salim) succeeded to the throne of India (1605-1627 A.D.), and after him came Sháh-Jahán (1627-1657 A.D.). Upon a report arising as to his death, internecine strife occurred amongst his sons, the result of which was that Aurangzib (Alamgir) issued as victor, and he deposed and placed his father in confinement at Agra, where he remained until his death in December, 1666.

Aurangzib died in 1707 A.D. at the age of 88, after a reign of 50 years. Upon the death of Aurangzib his son, Bahádur-Sháh, after a struggle, succeeded to the throne, but his reign lasted only five

[1] One *crore* or *kror*=100 *lákhs* or ten millions. A *lákh*=100,000.—W.E.G.

years, viz., from 1707 to 1712 A.D. He had no sooner died than civil war once more set in, followed by the brief reign of nine months of Jahándar-Sháh, son of Bahádur-Sháh, and he gave place to his nephew, Firukh-Sháh, and he again in 1718 A.D. was succeeded by Muhammad-Sháh.

It was during this monarch's reign that the famous invasion of India by Nádir-Sháh took place, and with this we shall conclude our review of the overland campaigns against that peninsula from the West and through Afghánistán.

(To be continued.)

SMOKELESS POWDER AND ENTRENCHMENTS.

Had the Boers read the "Broad Arrow"?

By Lieut.-Colonel ALSAGER POLLOCK.

THE introduction of smokeless powder conferred obvious advantages upon the defenders of a position, and very naturally the application of such advantages to the system of placing and constructing field entrenchments received attention in the Service papers of this country, and of others. Yet it is somewhat remarkable that although the Boers in the late war displayed a clear understanding of the simple expedients by which the use of smokeless powder might be turned to account by forces acting on the defensive, the British not only failed to employ these themselves, but also ignored the possibility that the enemy might not neglect to make use of them. That the exercise of a very moderate amount of common sense should have sufficed to indicate what ought to be done goes almost without saying; but actually the failure to realise the truth is particularly inexcusable, because the whole matter had been discussed so long ago as 1892. The fact is, however, that it was then, as it is now, quite useless to ventilate ideas in the Service Press with any hope of attracting serious notice to them, no matter how important the subject. Cassandra in vain warned the Trojans of their impending dangers, and in the same way the British Army hearkens not to the voice of the prophets unless they happen to be great—and not always even then, as Lords Wolseley and Roberts can testify.

In this country, the people who voluntarily read books or articles on military subjects are usually those who already know as much or more than the writers. The majority of the British nation wallows contentedly in the mire of its own ignorance, and the average officer, though occasionally compelled to read a little in order to pass examinations, merely "crams" just enough to secure the defeat of the examiners. The practical advantages of such study are about equal to those enjoyed by a parrot who has learned to repeat the words of Nelson's last signal.

Nevertheless, and more especially having in view the so-called "lessons of the war"—which are, indeed, very few in number—I have thought it desirable to obtain permission from the Editor of the *Broad Arrow* to reprint part of an article contributed by myself to that paper in 1892;[1] and in addition to publishing the extract, with my remarks upon it, in the *United Service Magazine*, to submit it for simultaneous publication in the Journal of the Royal United Service Institution.

Actually, it seems to me that the views which I expressed in 1892 require but very little amplification in order to cover completely all that the war has taught upon the matter now in question. I do not

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[1] "Reflections on War, II." p. 391, *Broad Arrow*, March 26th, 1892.

actually suppose that the Boers studied the *Broad Arrow*, and the conclusion to which I therefore arrive is that ordinary common-sense suggested to them in 1899 the same ideas that had occurred to myself in 1892. The wonder is not that the Boers realised the correct course to adopt, but that so many very superior persons, replete with scientific knowledge of war, should have failed to do so. The extract to which I desire to call attention, reads as follows:—

"The introduction of smokeless powder combines with the range and penetration of projectiles in calling for many changes in the system of field entrenchments. It will be necessary not only to provide cover which will resist the more powerful weapons now in use, but as well as protecting troops as far as possible in the positions actually occupied, to endeavour by every available means to deceive the enemy into supposing that points where not a man is exposed are those upon which they should direct their fire. To conceal entrenchments from the enemy, the first thing to do is to avoid the use of straight lines. Trenches should be irregular and follow the smallest features of the ground. Where command of view and fire can be obtained from trenches so deeply excavated as to stand in no need of aid from parapets, the adoption of such expedients will remove the danger from increased penetration; and where time admits of removing the *déblai* to a distance, and forming it into sham parapets, deception of the enemy as to the actual whereabouts of the trenches will often be possible. To further strengthen the position, in cases where the earth excavated from trenches has been so disposed of in rear, time only is required to render the parapets thus formed a real, in place of a simulated, line of defence. Trenches could be dug in rear of the parapet in which the second line could lie close until wanted, after having freely shown themselves in the initial stages of the battle, so as to lead the enemy to suppose that the parapets contain the fighting line, and consequently draw hostile fire thereon.

"The real shooting line, thanks to smokeless powder, would probably remain undiscovered until comparatively short ranges had been reached, and throughout the action would often escape any attention from the enemy's artillery. The extraordinary development in the destructive power of field guns has now reached such perfection that infantry can except scarcely any protection from such shelter trenches as are now in use. To deprive the gunners of the advantage of directing their sights upon lines of parapets easily distinguishable, is the only means of reducing the accuracy of their aim. Even supposing the heads of the defenders, lining a trench without a parapet, to be visible to the opposing artillery, the mark would not be an easy one to lay guns upon.

"It is impossible to predict accurately what will be the actual effect of modern weapons fired in anger, but the use of smokeless "blank" at the autumn manœuvres should enable it to be ascertained how far a firing line can be concealed from an enemy, and to what extent the latter can be deceived into supposing it to be placed where it is not. Head-cover for a shooting line is an advantage the importance of which cannot be exaggerated. Entrenching tools now form a portion of the soldier's equipment, and a certain quantity of these are consequently available at any moment; to add a sand-bag would not only be tactically advantageous, but would add to the soldier's comfort. Great coats are now carried in a roll in place of

flat, and a useful little sand-bag would form a convenient case for the coat, ready for instant use in making a loophole, whilst at night a stuffing of grass would enable it to be used as a pillow. Of course such a sand-bag would not of itself be sufficient to resist the penetration of a modern rifle bullet, but it would afford a support for the roof of a loophole and at least reduce the velocity of the projectile."

It seems scarcely needful to labour the assertion that the ideas contained in the foregoing extract coincide rather more than approximately with the successful methods actually employed by the Boers upon a number of occasions; and also by certain Colonial officers who similarly relied upon common-sense in default of an accurate acquaintance with the "Manual of Field Engineering." For example: On January 3rd, 1900, Major Neylan of the Cape Police, having ascertained that his camp near Cyphergat was about to be attacked by a very superior force, decided at once to quit his ill-constructed and ill-placed entrenchments which he regarded as untenable, and to hide his men amongst the surrounding rocks and crevices. The result was that the enemy was held completely in check, and the Police did not sustain even one single casualty. The camp itself and the shelter trenches within which it lay, attracted the whole of the enemy's fire; and the very accuracy with which the Boer gunners directed their shrapnel from a British 15-pounder captured at Stormberg tended to guarantee the pleasant immunity enjoyed by the defenders who lay concealed outside the lines. I arrived in the camp just as the fight was virtually over, and seeing how knocked about it was, could not understand why there were no dead men in the trenches until Major Neylan explained to me what he had done. Naturally I was intensely amused at the slim manner in which the "Brother" had been outwitted, and I need hardly say that I admired much the method by which this had been effected. Certainly, had the Police occupied their trenches they must have suffered very severely indeed, and might, not improbably, have been compelled to surrender.

History has a way of repeating itself, and the artifice of pushing forward the shooting line to concealed positions upon, or at the foot of, the slope of a hill position, represents no more than the modern application of Wellington's plan which he more than once employed during the Peninsular War. Wellington, at Busaco and elsewhere, arranged counter-attacks by infantry concealed in forward hollows below the main crest. With black powder, the fortunes of such a counter-attack depended upon a volley and a bayonet charge. With smokeless powder, troops similarly placed can locally be the real shooting line, and the counter-attack can be the opening of magazine fire when the enemy has persevered to within really effective range. This application of old times tactics to the present day furnished the *motif* for the article from which I have already quoted, and is dealt with in the first part of it. I may here mention, for the guidance of any one who may take the trouble to look up the article itself, that in line four some eccentricity of the printer or of the proof reader has caused the word "former" to appear where it should read "latter." This, however, is of but little consequence.

The lessons that seem to me to have been brought home to us, in reference to the disposition of troops for the defence of a position, are (1) a portion at all events of the shooting line should be placed where the enemy is least likely to detect its presence; (2) the shooting

line must have head-cover, to provide concealment certainly, and protection when possible; (3) the supporting troops require protection rather than the concealment of their positions, and may sometimes best serve the defence by freely exposing themselves thereon until obliged to get under shelter; (4) when time admits, sham entrenchments can be constructed with advantage; and (5) the general aim should be to lead the enemy to suppose that the immediately active defenders are where they are not and are not where they actually are.

All this seems to me to deduce itself so obviously from the use of smokeless powder, that I marvel greatly at the too general failure to grasp the situation. I fancy that the explanation is that the British officer is too frequently compelled to rely upon his memory, instead of being encouraged to use his wits. Moreover, officers on full pay who write or talk, must "prophesy smooth things"; and the exhibitions of crass imbecility that too often pass for tactical sagacity at our so-called "manœuvres," consequently evade the rude criticisms that the occasions properly demand. We have emerged from the Boer war less well instructed than we ought to have been before it began. There has been much said and written about the "lessons of the war"; but actually no lesson was taught by the South African campaign that should not have been theoretically familiar to us many years ago; and I believe that there is only one which had not actually been pointed out in the Service journals. There was, in fact, but one genuine revelation; and this was the true immensity of the power of "bluff" conferred by smokeless powder upon an astute commander opposed to a less competent adversary. As Captain Fournier of the French General Staff has so ably pointed out in the preface to the second volume of his "La Guerre Sud-Africaine," we lost battles at the commencement of the war because we made frontal attacks without proper reconnaissance and unsupported by turning movements; whilst in the later stages of the campaign we failed to win decisive victories because we made turning movements unaccompanied by frontal attacks. Generally speaking, it is to be feared that the British Army, as a whole, has acquired from the Boer war a considerable volume of heresies, but only a very slender amount of really practical knowledge. Even in the matter of entrenchments, with which this article is primarily concerned, what has chiefly resulted is a tendency to press the application of certain theories, in season and out of season, rather than to employ memory, sagaciously, as the valuable aid that it so often may be to the exercise of common sense for the solution of each particular problem.

THE RUSSIAN CAVALRY: SOME NEEDED REFORMS.

Translated from the "Voïénnyi Sbórnik."

THE Turkish War showed that the Russian cavalry, like the French and German, was very far from perfection, and certain reforms, as they were considered, were consequently introduced; an increase both in the number of regiments and of the squadrons in each regiment was made; while the more drastic step was taken of substituting dragoons throughout for charging cavalry; new regulations and drill were inaugurated, the officers' school remodelled, and measures taken for the improvement of the supply of horses, the officers on joining being given mounts at the Government's expense, although they are obliged to keep one of their own as well. How far have these measures succeeded? The negative answer that must be given to the question of their being all that could be desired is not only due to the non-appearance of a Ziethen or Zeidlitz. Great leaders are the outcome and corollary of a skilfully devised system, and, moreover, the conditions of those great leaders' day, which were extremely favourable to cavalry, have entirely changed, notably that of the long-continued wars which gave time for both cavalry and leaders to be trained on the spot. Above all, the officer must be most highly trained. Time and trouble enough are spent on the men, but little or nothing has been done for the officer, though more than twenty years have passed since the hard school of war gave its *imprimatur* to the reforms, as was then thought. Infantry may do its work without officers, but a squadron of cavalry is no better than a lot of scouts without them. And a high authority has declared that in Russia "officers have no real knowledge nor interest in their work," while private opinions as to their qualifications are still more unfavourable. The new weapons and the new tactics have made it necessary that the training of the officer should be, not less elaborate, but far more so, as are his duties.

It appears that the yearly requirement of officers for cavalry of the Line is not more than 70, while some 240 are appointed; but a large proportion of these disappear from various causes; 170 leave the cadres for various reasons, of whom 100 pass into the Reserve; 22 to foreign service and the gendarmerie; 25 to various non-regimental appointments, and so on. Sixty-five per cent. of these are mainly cornets, and 25 per cent. staff captains. Of the whole number 80 per cent. are men with means, and the remainder men who are forced for want of means to seek appointments in which there is less uncertainty of tenure. This habit of going into the Service for a short time is one common to moneyed men of all countries, and is everywhere deleterious to the Service. "In the good old times," says a writer in this Journal, "the gentry gave us what we wanted, viz., means and culture combined. The intelligence is still to be found among them, but the means have passed to another class, where the culture is not forthcoming, and which, moreover, does not send its best representatives into the cavalry. What we want in a cavalry officer is not mere means,

but personal character, good bearing, and cultured intelligence." Most of those who remain in the Service have no private means, but from trying to keep up with those who have, they get into debt and are thus forced to seek another career. Those who are thus forced are often some of the best men. The 70 cornets who pass into the Reserve may not matter much, but the 40 staff captains, with from ten to fifteen years' service, are a real and serious loss. To remedy this it is proposed to increase the pay of officers, and this will doubtless do much, but the whole system of training needs reforming. The present educational establishments send out from 200 to 300, as against the actual requirement of only 70.

Before entering on a closer consideration of how matters are to be remedied, it is well briefly to describe the source from which the cavalry of the Line draws its officers. The Nicolai Cavalry School supplies 25 per cent., and the two Junker Schools of Tver and Elisavetgrad the remainder. The first of these receives cadets, *i.e.*, officers' sons who have been through the full course, and outsiders who have a certificate of having passed through eight classes at the Gymnasium, or an equivalent at a modern school ("Real-Schule") subject to the payment in both cases of a caution money of 300 roubles (£31 5s.), and a charge for board and education of 550 roubles (£57 6s.). Of late, owing to a dearth of candidates, cadets have been admitted on paying the caution money only. The cadet schools give certificates very readily to candidates for the cavalry, but the more promising pupils are strongly advised to go to the artillery or engineers. This, it appears, is not the case in the German Army, yet there both artillery and engineers do well enough. But the custom has lasted for sixty years or more, and is therefore not likely to be altered easily. There is further a cadet school especially intended for supplying the Nicolai Cavalry School, viz., the cadet school of that name at St. Petersburg, the condition for entering which is solely the power to pay heavy fees, and it seems expressly intended for those who cannot pass in elsewhere, while the system of instruction adopted is entirely inappropriate to the career for which it professes to prepare pupils; and though large funds are at its disposal, it is the only one that is half composed of outsiders, *i.e.*, those who receive a general education.

For entrance into the Elisavetgrad and Tver Junker Schools it is necessary to pass a special and very limited examination, but a candidate having an equivalent certificate from the cadet corps, can present himself at a regiment as a volunteer, and cannot well be refused, provided he can deposit the caution money of 200 roubles (£20 17s.) and can keep himself till he is a substantive officer. Colonels sometimes arbitrarily raise the amount required to 1,500 roubles (£156 5s), thus still further enhancing the value of the power to pay; but practically they have no choice. The standard required is such as may be generally passed by a fairly intelligent lad of fourteen, and seventeen is the lowest age for entering the Service, so that it is either a premium put on laziness and stupidity, or a boy must kick his heels about for three years. For the last five years classes have been held at the Elisavetgrad on the same conditions as those of the Nicolai Institute for pupils who have finished their secondary education, but there is no likelihood of their attracting a better class of civilian pupils, or introducing any better material into the ranks of the officers of the cavalry. The course in these Junker Schools is two years, and in that short time they are expected to learn all the science and art requisite for a cavalry

officer who has, among other duties, to teach his men riding and the training of their horses, the mastering of which in themselves alone requires years of study. Only some twenty-six to twenty-eight weeks in the year are available for study. As regards riding, the Junker during this time has from four to five lessons of three-quarters of an hour each, and rides with a squadron four weeks in the two years, or in all less than a recruit does in his first year.

On joining the regiment, which the pupils of the Nicolai School and those from the special classes do as cornets, a time of trial and disenchantment begins for them. It is the gloomiest time of the year, when all the roads and the country are a slough of mire, and the young cornet has first to buy a horse, in doing which, as a rule, he has had no experience, and in addition probably he has no money, for his "caution" has been spent on uniform; moreover, his 200 roubles (£20 17s.) would not go far, when the saddle alone costs 130 (£13 11s.). He buys a colt three to four years old which he does not get attached to, for he has to hand it over to the regimental rough-rider to train, while he finds himself mounted on an old trooper very little better than those of his men, and he too often gets into such debt over the charger that he has purchased as to hamper himself for years. The "Standard Junkers" (a rank similar to the *Porte-epee Fähnrich* in the German Army, officers in all but name) are the worst off, being generally drafted to strange regiments when their time of training is over.

The non-commissioned officers are so deficient in knowledge that most of the rough work in the squadrons falls on the officers, hence the important duties of training recruits and scouts are left principally to the young officers and Standard Junkers. From among the elder officers are selected those for such staff appointments as adjutant, paymaster, and the like; but many of these, although they have lost all enthusiasm, are only too glad to pass on these irksome duties, which all-important though they are, only too often meet with no recognition. The work of a squadron leader is, however, attractive and full of interest, so that the young man wakes up on reaching it, and for a few years is so energetic that he does not care to share his work even with other officers. But his zeal generally only remains till he has earned his right to promotion.

On the other hand, the staff officers are worse off than squadron commanders, for if they have only passed through the Junker School they never rise to the command of a regiment. They are at a serious disadvantage in the regiment owing to the rule that promotion with them means transfer. As for their tactical knowledge, except where they have had an opportunity of refreshing it at the officers' school (Staff College), it remains what it was when they joined from the Junker School. Generally speaking, tactical exercises have been of little profit in the Service, except that they have caused officers to study maps freely. The squadron commanders should have been able to guide the studies of their juniors, but are quite unfitted by training and habit to do so; the staff officers of the regiment are even less fitted; and the colonel can do but little without some help from below. As for officers of the General Staff being attached for the purpose, they, as a rule, cannot carry on the drills themselves; and three or four lessons would be of little use to some thirty or forty pupils, of whose capabilities and knowledge of their duties the instructor would necessarily be quite ignorant.

To come now to regimental commanders, they are for the most part in the cavalry of the Line, not of the flesh and blood of the regiments they command. Their ideas, their expectations, and their experience of the Service have been formed under other conditions, and the result is a breakdown. As for officers from the General Staff, all their experience consists in having commanded a squadron for a year, often in one of the Guard regiments some ten or twelve years before, and being attached for six months more when already promoted to colonel to pick up their new duties. Moreover, both Staff and Guard officers are often appointed only for a year or two. Line officers generally stay with their regiments a fairly long time, and owing to their experience, both in drill and management, and thorough knowledge of all the conditions of service and life in the Line, they make excellent chiefs; but they are deficient in tactical training and are weighed down by having no hope of further advancement, for though there is no limit of age, they are appointed at a time of life when no further promotion is to be expected. As for the superior officers, they are even greater strangers to the Line, and regimental duty as well, having for the most part not had such training as the command of a regiment gives. Their aims, however lofty, are often frustrated by ignorance of what every squadron leader knows. When men reach this stage it is too late for them to change. Energetic commanders may put transitory life into the bodies they command, but this often does not last as long as their tenure. The change, to be lasting, must come from below.

The remedies suggested are, in the first place, the introduction of uniformity amongst the cavalry schools, giving them a three years' course and limiting them to taking pupils who have been through six classes at a cadet school, a "Gymnasium" or "Real-Schule." These pupils are of an age when all physical exercises, and particularly riding, can be acquired without effort and in a lasting way, while their general education is so far advanced that time has not to be wasted in teaching non-professional subjects. They should be taken straight from school, on the certificate of their teachers that they have passed the necessary standard, preference being given to the sons of cavalry officers and landed gentry, all expenses being paid by the State, and a smart uniform, say hussar, provided. There should be no intermediate examinations, and an allowance of 500 roubles (£52 2s.) should be made for uniform and saddlery on leaving. Appointments to be made to the Line only, and on condition of serving not less than 4½ years there, transfer to the Guards being admissible only on attaining the rank of lieutenant. Both the Nicolai and Elisavetgrad establishments should be kept, up, and also a separate one, to feed the Cossack regiments in their own parts of the country, so as not to damage their health or patriarchal manners. Secondly, immediately on appointment, the young officer should be supplied with a horse fully trained, to be his sole property, except that it may not be sold until the end of from five to seven years, when it should be replaced by another, and so on until his retirement. When he leaves the regiment it should either go back to the regiment or become his property at a rate proportionate to the number of years short of that time he has served with it. Thirdly, all captains on the Staff, before getting a squadron command, should be compelled to go through a fresh course at the officers' school in technical subjects, including the theory of riding, for after ten or fifteen years of service they have forgotten much of what they learnt, though, if properly trained in the first instance, this course need not last longer than

one year. Next, a small allowance should be made for table-money to commanders of squadrons, as of batteries, and a further allowance of from 35 (£3 13s.) to 50 (£5 4s.) roubles a month for out-of-pocket expenses, inseparable from his duty, out of the surplus from the regimental funds. Then promotion to lieut.-colonel should be either by merit from amongst the captains—on condition of remaining with the regiment, or seniority, only three years, say, being necessary to qualify the "Rotmistr"[1] for promotion, though, of course, the promotions would have to be restricted according to requirements. The aim should be that at least half the Line regiments should be commanded by Line officers, and all reserve cadres should be kept for them. To qualify for the general staff an officer should have at least two years in command of a regiment, and then a year in actual charge of the finances of a regiment.

As for tactical instruction in regiments, a great change is needed, far more attention being required to be paid to the solution of tactical problems, mentally and on paper. In frontier garrisons these can be put under the conditions of probable actual warfare. Uniform must of necessity be attractive, and it might be wise to go back to the hussar and lancer dress, doing away, however, with braiding and gold lace on the back, and the like. Garrisons are often in such desolate places that many useful officers are driven out of the Service by sheer *ennui*. The remedy for this would be to put Regular regiments in the place of Cossack in such garrisons as Moscow, Warsaw, Kiev, Odessa, Nicolaiev, Kharkov, and Kamenets-Podolsk, the Cossack officers caring little for society. Under the improved system of education, volunteers need no longer be received charily, but with greater freedom than ever.

By sending them straight to the training detachment they will make excellent non-commissioned officers, their education making up for the short time they serve.

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[1] This corruption, like "Rittmeister," is, of course, more equivalent to major, though that word is also used.

THE FIRST APPEARANCE OF BRITANNIA ON MEDALS AND COINS; WHY ADOPTED.

By CHARLES DALTON, Esq.

IT will be a surprise to many to know that the first appearance of Britannia's figure on a medal was during the Commonwealth, and that this medal, which bears on the obverse the head of Oliver Cromwell, with his titles in Latin, was engraved and struck in Holland.

This rare piece was evidently a satirical medal, though not so described in the learned John Pinkerton's "Medallic History of England to the Revolution." It bears on the reverse "Britannia sitting, Cromwell kneeling, and reposing his head in her lap. . . . The French and Spanish Ambassadors contending in the foreground." The inscription is: "*Retire Toy, l'honneur appartient au Roy mon maister Louis le Grand.*" The only pleasing thing about this medal is the graceful and queenly figure of Britannia, who is sitting, and looking to the left, her left hand holding her shield, which bears the Cross of St. George.

The writer, who for many years was a coin and medal collector, is strongly of opinion that the Britannia which adorns the reverse of the aforesaid Cromwellian medal was adopted from the sitting female figure of Liberty, who so long had presided over the fluctuating fortunes, by land and sea, of the anti-Spanish Netherlands in general and Holland in particular. The prototype of the Roman goddess Libertas is of course the Greek divinity Pallas Athena, whom the Romans called Minerva—the goddess of all wisdom and knowledge—generally represented holding a spear and shield. It so happened that when Charles II. was restored to the Throne he appointed the brothers Rotier, of Antwerp—who were all gravers of seals and coins—medallists to the Crown, and sent them to the Mint. Two of the first Restoration medals struck by the Rotiers are thus described in Pinkerton's "Medallic History of England to the Revolution":—

Obv. The King's head and titles.

Rev. Minerva or Britannia sitting on a globe, under which Envy lies crushed. Legend: "*Invidia Major.*"

And:—

Obv. The King's head and titles.

Rev. Britannia receiving the offerings of Justice, Minerva, and Hercules.

In exergue: "*Felicitas Britanniæ, 29 Maii, 1660.*"

In the list of medals by the Rotiers given in Pepys' "Memoirs," the last-named medal is called "The Great Britannia."

Another medal, about the same date, represents Britannia, in a helmet, bearing a shield, and receiving offerings from various allegorical figures; the inscription "*Nullum Numen Abest*," and "*Britannia*" in the exergue. Pepys calls this medal "The New Britannia."

We now come to the famous naval medal struck in 1667, and described as follows by Pepys, who was Secretary to the Admiralty, under date of 25th February, 1667:—

"At my goldsmith's did observe the King's new medal, when in little, there is Mrs. Stewart's face, as plain as ever I saw anything in my life; and a pretty thing it is that she should choose her face to represent Britannia with."

According to Horace Walpole, in his "Anecdotes of Painting," Philip Rotier, who executed the last-named medal, was in love with the beautiful Miss Frances Stewart (afterwards Duchess of Richmond), and represented her likeness, under the form of Britannia, on the medal in question. It is on record that *la belle* Stewart was very fond of masquerading, and posed as Pallas with her spear. Rotier probably saw her in this part, and, struck by her beauteous face and form, represented her as Pallas on his "Peace of Breda" medal, and called her Britannia. And so it came to pass that "La Belle Stewart" came to be represented subsequently on the British copper coinage, and has maintained her supremacy thereon for over two and a quarter centuries.

Dr. James Murray, in his "New English Dictionary," says, quoting from *Notes and Queries*, that:—"The earliest coin with the figure of Britannia is a copper half-penny of 1672." But in "An Historical Account of English Money," by Stephen Martin Leake, Clarenceux King of Arms, it is stated that:—"The first copper Halfpence coined by authority in England, was in 1665, having the King's bust laureat, looking to the left, and the date under it; '*Carolus a Carolo.*' Reverse: *Britannia* sitting upon the globe, holding in her right hand an olive branch, and in her left the spear and shield, whereon appear the crosses of *St. George* and *St. Andrew* interlinked. '*Quatuor Maria Vindico.*' Exergue: '*Britannia.*' These were by some called 'Lord Lucas's Farthings,' from his noted speech upon that occasion, but were soon after called in, to please a neighbouring monarch; they are, therefore, not very common, especially the Halfpence." [1]

The re-issue of half-pence and farthings in 1672 have the King's head, like the former; "*Carolus a Carolo.*" Reverse: The figure of Britannia, as before, but instead of the legend "*Quatuor,*" etc., have only the name "*Britannia,*" and the date in the exergue.[2]

A medal struck in the reign of James II. represents Britannia with a helmet; but this head-dress was dropped during the eighteenth century. The trident took the place of Britannia's spear about the middle of George III.'s reign.

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[1] 3rd Edition, 1793, p. 371.
[2] *Ibid.*

NAVAL NOTES.

HOME.—The following are the principal appointments which have been made: Rear-Admiral—The Hon. A. G. Curzon-Howe, C.V.O., C.B., C.M.G., to be Second-in-Command on the China Station. Captains—T. Y. Greet to "Æolus"; Hon. H. L. A. Hood to "Hyacinth"; F. W. Fisher to be Commodore, 2nd Class, in charge of Naval Establishments, Jamaica; W. S. Rees, C.B., to "Collingwood." Commanders—H. F. Oliver to "Mercury"; J. Nicholas to "Phœnix."

Rear-Admiral the Hon. A. G. Curzon-Howe, C.V.O., C.B., C.M.G., has been selected to succeed Rear-Admiral H. Grenfell, C.M.G., as Second-in-Command in China, that officer having vacated the appointment owing to continued ill-health.

The Home Fleet, under the command of Vice-Admiral Sir A. K. Wilson, K.C.B., with the Cruiser Squadron, under the command of Rear-Admiral W. H. Fawkes, C.V.O., consisting of 17 battle-ships and cruisers, arrived off Dover on the 4th inst., where they moored in two lines to salute the President of the French Republic on his arrival. The French cruiser "Guichen," conveying President Loubet, accompanied by the destroyers "Harpon" and "Escopette," arrived at 12.45 p.m. on the 6th inst., and steaming between the lines of the assembled fleet, took up her moorings between the fleet and the shore, leaving again with the President on his return to France on the forenoon of the 9th inst. In the course of the same afternoon, the Home Fleet and Cruiser Squadron weighed and proceeded to Portland.

The Channel Squadron assembled at Spithead on the 6th inst., and will remain there during the stay of the American squadron, which arrived at Portsmouth on the 7th inst. The squadron is composed of the following ships, under the command of Rear-Admiral Cotton:—First-class battle-ship "Kearsarge"; second-class cruisers "San Francisco" and "Chicago," with the first-class gun-boat "Machias"; the American ships did not remain at Spithead, but were brought into the harbour.

The first-class battle-ship "Exmouth," commissioned at Chatham on the 2nd ult. for the Mediterranean, where she will relieve the "Victorious." She left on the 15th ult. for her station. The new first-class armoured cruiser "Leviathan" commissioned at Portsmouth for the China station.

The second-class cruiser "Mercury" commissioned at Portsmouth on the 18th ult., as tender to the Cadet Training College at Osborne. The first-class battle-ship "Hood" commissioned at Devonport on the 25th ult. for the Home Fleet, the officers and men of the "Collingwood" turning over to her. The first-class battle-ship "Victorious," convoying the torpedo-boats Nos. 104, 105, 106, from Malta, arrived at Plymouth on the 29th ult., and will pay off at Chatham.

The first-class cruisers "Spartiate" and "Europa," bringing relieved crews from China, arrived at Portsmouth and Plymouth respectively on the 30th ult.; during the run home from Gibraltar, which lasted 60 hours, the "Spartiate" made a 48 hours' full-power test, in which she averaged a speed of 20 knots.

The Cruise of the "Glory" up the Yangtze.—The first-class battle-ship "Glory," flying the flag of Vice-Admiral Sir C. Bridge, K.C.B., has beaten the record by being navigated safely up the Yangtze to Hankow, where she arrived on the 7th May, having entered the river on the 29th April. The "Glory" is the first battle-ship, and also the largest ship, that has ever been to Hankow, and probably the largest ship that has ever been 600 miles up a fresh water river. Her arrival created great excitement among the Chinese, and a profound impression on the Chinese officials. On her way up, the "Glory" anchored off Nanking, and the Viceroy came off to visit the Admiral and inspected the ship, as also did the Viceroy of Wuchang, the "Glory" anchoring at first off the town of Wuchang, which lies somewhat higher up, and on the opposite side of the river to Hankow. Previous to the "Glory's" visit, the largest war-ship to visit Hankow was the first-class cruiser "Endymion"; while Nanking was visited in 1868 by the "Rodney," the flag-ship of Sir Henry Keppell, and the last of the wooden ships of the line which was in commission on a foreign station in our own or a foreign Navy.

Steam Trials.—The first-class armoured cruiser "Berwick," belonging to the County class, has completed a most satisfactory series of trials, which occupied only nine days, although it included two trials of 30 hours' and one of 8 hours' duration, no untoward event occurring to interfere with the uniformity of success. The "Berwick" is the first cruiser to be completed under the new conditions, which provide that the vessel will go on trial from the builder's yard, and will return there to be completed for commission, instead of going for trial and completion to the dockyards. This vessel is also of special interest as she is the first built by Messrs. William Beardmore & Co., at their shipbuilding works at Glasgow, although in the same establishment, under the *régime* of Messrs. Robert Napier & Sons, many notable war-ships were constructed. The Beardmores, however, have long been successful as an armour-plate and steel forging firm, and have only recently added shipbuilding.

The "Berwick" is a vessel 440 feet long, of 66 feet beam, and 24 feet 6 inches in draught, the displacement being 9,800 tons. On each of the trials the vessel was, of course, loaded to design draught, so that the mean displacement throughout the trial agreed with the contract conditions. The machinery, which is of the triple-expansion type, supplied with steam from Niclausse boilers, has been fitted on board the ship by Messrs. Humphrys, Tennant, & Co., London, and was designed to give with natural draught a maximum power of 22,000-I.H.P.

Steam Trials of H.M.S. "Berwick."

Description and duration of trial	30 hours at ¼th power.	30 hours at ⅘th power.	8 hours at full power.
Date of trial	May 28, and 29, 1903.	June 1 and 2, 1903.	June 5, 1903.
Where tried	Firth of Clyde and Irish Sea.	Irish Sea.	Firth of Clyde.
Pressure in boilers, mean, 1 lb. per square inch	222	240	265
Pressure at engines, mean, 1 lb. per square inch	215	230½	221
Vacuum, mean ... ... inch	27·87	27·75	27
Cut-off in high-pressure cylinders, per cent. of stroke	63	75 S. 76 P.	76
Revolutions per minute	84·5	128·9	139·5
I.H.P.	4,676	16,552	22,680
Speed of vessel over measured mile knots	14·85	21·644	23·613
Coal consumption per hour per I.H.P. ... ... lbs.	1·74	1·79	1·91

The trial results, which are recorded in the Table above, show that on the 30-hours' trial at one-fifth power the coal consumption worked out to a mean of 1·74 lbs. per I.H.P., while the H.P. was 4,676, and the speed of the ship on the measured mile 14·85 knots. On the trial at four-fifths power the mean I.H.P. for the 30-hours' run was 16,552, the coal consumption being 1·79 lbs., while the speed of the vessel was 21·64 knots. On the full-power trial the very high speed of 23·613 knots was attained, which is exceptionally satisfactory in view of the fact that earlier cruisers of this class have not quite attained their designed speed. But the result of the "Berwick" trials establishes what we have all along contended—that with modified propellers no difficulty would be experienced in ultimately exceeding 23 knots with all the County cruisers. The H.P. developed on the 8 hours' full-power trial was 22,680-I.H.P., and the coal consumption worked out at 1·91 lbs. per H.P.—*Engineering.*

REVISED MEMORANDUM ON SEA POWER AND THE PRINCIPLES INVOLVED IN IT.

SUBMITTED TO THE COLONIAL CONFERENCE, 1902, BY THE ADMIRALTY.

The importance which attaches to the command of the sea lies in the control which it gives over sea communications. The weaker sea-power is absolutely unable to carry to success any large military expedition over sea. The truth of this is shown by reference to the history of the past.

In ancient times the Greek victory of Salamis threatened the Persian communications across the Dardanelles, and doubtless this danger contributed to bring about their retreat into Asia.

The failure of the famous Syracusan expedition was due to the defeat of the Athenian fleet, and had its modern counterpart in the failure of Admiral Graves off the entrance to Chesapeake Bay in 1781. In both cases the army had to surrender because its communications were cut. The defeat of Nikias dealt a heavy blow to the supremacy of Athens, and may, perhaps, be said to have been one of the principal events which led to her downfall. The surrender of Cornwallis, at Yorktown, was the prelude to the independence of the United States.

The main cause of the failure of the expedition of Napoleon to Egypt was the defeat of the French fleet at the Nile, which was the first step towards cutting his communications with France, and the subsequent surrender of the French army.

On the other hand, the advantages which accrue to the stronger sea-power, after it has won the command of the sea, are equally illustrated by historical example.

The fall of Quebec and the conquest of French Canada was mainly due to the fact that our superior sea-power closed the Gulf of St. Lawrence to the French and opened it to us. In any similar struggle in the future, this route will be as vital as in the past.

The expedition to Egypt under Abercromby, in 1801, the Peninsular war, the expedition to the Crimea, the South African war, just concluded, are all instances of great military enterprises which could only have been carried out by a nation holding the command of the sea.

The command of the sea is determined by the result of great battles at sea, such as Salamis, Actium, Lepanto, those which led up to the defeat of the Armada, and those between the Dutch and English in the 17th century, in which each side concentrated his whole available force for the decisive struggle.

To any naval Power the destruction of the fleet of the enemy must always be the great object aimed at. It is immaterial where the great battle is fought, but wherever it may take place the result will be felt throughout the world, because the victor will afterwards be in a position to spread his force with a view to capturing or destroying any detached forces of the enemy, and generally to gather the fruits of victory, in the shape of such outlying positions as the New Hebrides, Fijis, Singapore, Samoa, Cuba, Jamaica, Martinique, the Philippines, Malta, or Aden, which may be in possession of the enemy, his shipping and commerce, or even to prosecute such oversea campaigns as those in the Peninsula and South Africa.

Stress is laid on the importance of the great battle for supremacy, because the great development of the navies of France, Germany, the United States, and Russia, indicates the possibility that such battles may have to be fought in the future. It is the battle-ships chiefly which will have to be concentrated for the decisive battle, and arrangements with this object must be made during peace.

The geographical conditions and the varied interests of the maritime Powers prevent such complete concentration in modern times as was practicable in the past. Thus Russia divides her battle-ships between the Baltic and Pacific; the United States between the Atlantic and Pacific; both Germany and France have concentrated in European waters, where also the greater part of the British battle-ships are massed.

Our possible enemies are fully aware of the necessity of concentrating on the decisive points. They will endeavour to prevent this by threatening our detached squadrons and trade in different quarters, and thus obliging us to make further detachments from the main fleets. All these operations will be of secondary importance, but it will be necessary that we should have sufficient power available to carry on a vigorous offensive against the hostile outlying squadrons without unduly weakening the force concentrated for the decisive battle, whether in Europe or elsewhere.

The immense importance of the principle of concentration and the facility with which ships and squadrons can be moved from one part of the world to another—it is more easy to move a fleet from Spithead to the Cape or Halifax than it is to move a large army, with its equipment, from Cape

Town to Pretoria—points to the necessity of a single navy, under one control, by which alone concerted action between the several parts can be assured.

In the foregoing remarks the word *defence* does not appear. It is omitted advisedly, because the primary object of the British Navy is not to defend anything, but to attack the fleets of the enemy, and, by defeating them, to afford protection to British Dominions, shipping, and commerce. This is the ultimate aim.

To use the word *defence* would be misleading, because the word carries with it the idea of a thing to be defended, which would divert attention to local defence instead of fixing it on the force from which attack is to be expected.

The traditional rôle of the British Navy is not to act on the defensive, but to prepare to attack the force which threatens—in other words, to assume the offensive. On one occasion England departed from her traditional policy, and acting on the defensive, kept her ships in harbour unrigged and unmanned, with the result that the Dutch fleet sailed up the Medway and burnt the ships of war at their moorings.

The strength and composition of the British Navy, or of any British squadron, depends, therefore, upon the strength and composition of the hostile forces which it is liable to meet.

The total estimated National Expenditure for 1902-3, exclusive of war charges, amounts to £129,159,000, of which the Navy Estimates account for £31,255,500, or about one-fourth, which is equal to a contribution of 15s. 1d. per head of the population of the United Kingdom. If this were divided equally per head among the white population of the Empire, the charge per head would amount to 12s. 0¼d. For the actual naval expenditure per head in the several parts of the Empire, see Appendix A.

The annual value of British Trade (including Bullion and Specie), which it is the ultimate object of the Navy to protect, amounted, in 1900, to :—

Trade of United Kingdom with Foreign Countries ...	£711,838,000
Trade of United Kingdom with British Dominions beyond the Seas	237,098,000
	£948,936,000
Trade of British Dominions beyond the Seas with Foreign Countries and among themselves	254,342,000
Total Trade of Empire	£1,203,278,000

The figure £254,342,000 has been arrived at by deducting a sum of £72,624,000 from the sum of the total amounts of Trade, of all the Dominions, in order to allow for the duplication of the reciprocal Trade of those Dominions among themselves.

It will be seen that about one-fifth of the Total Trade of the Empire is not directly connected with the United Kingdom.

The question may, with advantage, be further considered with reference to :—

1. Atlantic Ocean.
2. Eastern Seas and Pacific Ocean.

The British Trade which passes the West Coast of Africa cannot be placed at a less value than £140,000,000 per annum, of which about one-fifth is with South African ports, one-third with Australasia, and one-third with South America. South Africa, Australia, and New Zealand are,

therefore, each interested in the maintenance of a squadron on the West Coast of Africa sufficiently powerful to protect this Trade.

The Trade of the United Kingdom with the Atlantic Coast of the Continent of North America amounted, in the year 1900, to £218,000,000; of which about £30,000,000 was with Canada.

So far as can be estimated, Canada had also about £14,000,000 of sea-borne Atlantic Trade with other British Dominions and Foreign Countries. Canada would, therefore, be interested in the success of the British Squadrons employed in protecting Trade in every part of the Atlantic. That is to say, Canada is not only interested in the North American Squadron, but also in the strength of the British Fleet as a whole.

The cost of maintaining the British squadrons on these stations, exclusive of any interest or sinking fund on the first cost of building is £802,000 per annum. This is included in the General Naval Vote, which is borne by the United Kingdom aided by annual payments, spontaneously offered, by the Cape of Good Hope of £30,000 and by Natal of £12,000, in lieu of 12,000 tons of coal.

The magnitude of the Trade in Eastern Waters may be gathered from the following Table, which shows so far as Statistics enable this to be stated, the relative interests in British Trade which passed, necessarily, through those waters during the year 1900, and also how the cost of maintaining the British squadrons in the Eastern Seas and the Pacific, which are ultimately charged with the protection of the whole, is apportioned :—

Countries.	Aggregate of Values of Trade which passed through Eastern Waters.[3]	Contribution to cost of maintaining Squadrons. (See Appendix A 1.)[1]	Percent'ge interest in Trade.	Percent'ge contribution to Squadrns.[1]
	£	£	Per cent.	Per cent.
British Empire other than India, Australia, and New Zealand...	325,000,000	1,994,400	55	88·8
India	142,000,000	161,600	24	7·2
Commonwealth of Australia[2] ...	105,000,000	75,500	17	3·4
New Zealand	24,000,000	15,500	4	·6
Total	[3]	2,247,000[1]	100	100

[1] The total charge of £2,247,000 per annum is exclusive of any Interest or Sinking Fund on the first cost of building.

[2] Includes inter-State Sea-borne Trade.

[3] The figures in this column represent the sum of the values of the external Trade, of the various parts of the Empire, which passed through Eastern Waters. The aggregates thus obtained are, of course, in excess of the actual British Trade in these Waters, on account of the duplication of inter-Imperial Trade. This duplication, however, is necessary for the present object, which is to show, not the total magnitude of the Trade, but the relative magnitude of the Trade Interests of the various parts of the Empire. The column does not admit of being added up for the reason stated.

NOTE.—The above Statistics of Trade are not quite complete, as they do not include the Trade of Hong Kong; there being no Statistics of the Trade of that place. This, however, is probably counterbalanced by the inclusion of the whole of the Straits Settlements Trade, which is largely "Entrepôt Trade."

Admiralty, June, 1902.
(Revised April, 1903.)

APPENDIX "A."

British Empire. Naval Expenditure.

Year.	——	Population.	Naval Expenditure.	Naval Expenditure per Head of Population.	Remarks.
			£	s. d.	
1902-3...	United Kingdom ...	41,454,621	31,255,500	15 1	
		1901.	1900.		
	New South Wales ...	1,352,509	47,831	0 8½	
	Victoria	1,199,068	59,401	1 0 nearly.	
	Queensland	496,596	34,796	1 4¾	
	South Australia	362,604	17,594	0 11⅞	
	Western Australia ...	182,553	4,732	0 6¼	
	Tasmania	172,475	4,970	0 7 nearly.	
	Total—Australia ...	3,765,805	169,324	0 10¾	
	New Zealand... ...	772,719	20,924	0 6½	
30-6-99	Canada	5,312,500	Nil ...	Nil.	
"	Newfoundland	210,000	Nil ...	Nil.	
"	Cape of Good Hope (White).	538,000	30,000	1 1¼	£30,000 paid annually towards expenditure of Imperial Governm't.
1898 ...	Natal	53,688	12,000	4 5¾	£12,000 paid in lieu of 12,000 tons of coal.
31-3-99	India[1]	216,710,483 Europeans 168,000	413,747 (for year 1900)	—	

[1] Includes £100,000 contribution towards H.M. Ships on East Indies Station, and £61,600 subsidy to Admiralty for manning and maintaining H.M. Ships for Naval Defence of India.

APPENDIX "A 1."

TABLE showing the Annual Cost of Maintenance, exclusive of first cost of building, of the British Squadrons in I.—Atlantic Ocean; II.—Eastern Seas and Pacific Ocean :—

I.—ATLANTIC OCEAN.

North America and West Indian	£330,000
Cape of Good Hope	396,000
South-East Coast of America	76,000
Total	802,000

II.—Eastern Seas and Pacific.

China	£1,430,000
East Indies	303,000
Australia	312,000
Total Eastern Seas	£2,045,000
Pacific	202,000
Total	£2,247,000

France.—The following are the principal promotions and appointments which have been made: Vice-Admiral—L. A. Caillard to command of the Squadron of the North. Rear-Admirals—C. J. Bayle to be Vice-Admiral; E. L. Gadaud in charge of Dockyard at Cherbourg. Capitaines de Vaisseau—H. L. Manceron, A. J. Bernard to be Rear-Admirals; J. C. L. Gaschard to be Chief of the Staff to Vice-Admiral Caillard; Saint-Paul de Sainçay, Bouxin to "Masséna" as Flag-Captain; J. F. Clément to "Amiral-Charner." Capitaines de Frégate—B. S. Sourrien, De Renny de Sugny, Q. F. Bouxin to be Capitaines de Vaisseau; P. A. De Gueydon to command of the Naval Division at Dakar.

Vice-Admiral the Marquis de Courthille, Commander-in-Chief of the French Northern Squadron, died suddenly on board his flag-ship, the "Masséna," at midnight on the 4th ult., at Pallice. The deceased Admiral, who had a long record of distinguished service, was sixty-three years old, and had been forty-six years in the Navy, which he entered in 1857. His death, coming within a few weeks of that of Vice-Admiral Roustan, the late Maritime Prefect at Brest, another very distinguished officer, and of Vice-Admiral Courrejolles earlier in the year, has caused a great shock in naval circles, and is a distinct loss to the French Navy. As if there was some fatality attaching to the Northern command, it may be of interest to recall that Vice-Admiral de Courthille's predecessor but one, Vice-Admiral Sallandrouze de Lamornaix, died also suddenly on board his flag-ship, the "Formidable," at Cherbourg.

Vice-Admiral Caillard, who has been appointed to succeed the late Vice-Admiral de Courthille in command of the Squadron of the North, hoisted his flag on the 1st inst. on board the first-class battle-ship "Masséna" at Brest; he is the youngest flag-officer of his rank, being only a little over fifty-seven, and has forty-one years' service. Vice-Admiral Caillard is a smart and popular officer, and has the reputation of being an excellent tactician, but his appointment is not altogether looked upon with favour among the senior officers of the Navy, as he has been selected over the heads of two or three of his seniors, and it is reported that one of these, Vice-Admiral Bienaimé, the Maritime Prefect of Toulon, who, in the ordinary course, ought to have succeeded to the vacant command, has consequently applied for permission to retire. Vice-Admiral Bayle, whose promotion to that rank has just been announced, has not been so fortunate; he has reached his new grade after forty-four years' service, and is sixty-one; he returned to France a few months ago, after having been Second-in-Command of the Squadron in China for two years, and he now passes over the heads of five of his seniors on the list. Of the two new rear-admirals, Manceron obtains his flag at the, for the French Navy, comparatively early age of fifty-five, after thirty-nine years' service; and Bernard at the age of fifty-nine, and forty-two years' service.

Vice-Admiral Gigon, the newly-appointed Maritime Prefect at Lorient, took over his duties on the 10th ult. Rear-Admirals Gadaud and Rouvier, who have been in command respectively at Havre and Marseilles, gave up their commands on the 1st July, as these appointments, which were only created some two years ago by M. de Lanessan, have now been abolished by the present Minister of Marine.

The Mediterranean Fleet.—The first-class battle-ship "Gaulois" has been placed in the Reserve at Toulon, her place being taken in the Active Squadron by the "Charles Martel," from the Reserve Division, while the "Brennus," from the same division, has temporarily taken the place of the "Charlemagne," which is also in the dockyard hands at Toulon. The Squadron, which is under the command of Vice-Admiral Pottier, left Toulon on the 21st ult., and proceeded to Carthagena, to salute the King of Spain on his visit to that port and arsenal. The squadron was composed as follows :—

First Division.

First-class battle-ships—"Saint Louis" (flag-ship of Commander-in-Chief), "Brennus," "Carnot."

Second Division.

First-class battle-ships—"Iéna" (flag-ship of Rear-Admiral Marquis, Second-in-Command), "Bouvet," "Jauréguiberry."

First-class armoured cruiser—"Chanzy."

Third-class cruisers—"Galilée," "Linois."

Destroyers—"Hallebarde," "Pertuisane," "Rapière," "Troude," "Epée," "Pique."

Torpilleurs de haute-mer—"Bourrasque," "Rafale."

It is interesting to remark that of the battle-ships composing the squadron for this cruise, no two are alike, while the Reserve Division is represented by the destroyer "Lahire," which is flying the flag of Rear-Admiral Besson, who is in command.

Steam Trials.—The new first-class armoured cruiser "Sully" has commenced her trials at Toulon; there has been some delay owing to a strike among the stokers of the dockyard, specially employed for the trials of ships, there being at each dockyard parties of highly-trained stokers and mechanics maintained for this purpose. The strike has been caused by a new regulation, which considerably reduces the men's pay, and which withdraws the privileges of a full day's pay and being allowed to return to their homes on the day of disembarkation. As the trouble is spreading to Brest and other ports, it is believed the Government will have to revert to the old terms. In the meantime, the "Sully" is running her trials with stokers drafted from other ships to the number of 81. During a 24 hours' run, for coal consumption at 10,000-I.H.P., the H.P. actually developed was 10,340; the consumption of coal per H.P. per hour was 632 gr. (1·264 lbs.), and 62 kg. (136·64) per square metre of grate surface per hour, the speed realised being about 18·5 knots; the consumption was much below that allowed for in the contract, viz., from 750 gr. (1·5 lbs.) to 800 gr. (1·6 lbs.) per H.P. per hour. The ship is fitted with Belleville boilers, which, with the machinery, worked well during the trial. During the consumption at 14,000-I.H.P., the engines actually developed 14,110-H.P., the consumption of coal per H.P. per hour being 678 gr. (1·35 lbs.), and 87 kg. (191·74 lbs.) per square metre of grate surface per hour, the mean speed not being given. At the 3 hours' full-speed trial, the mean speed was 21·4 knots, which is four-tenths of a knot over the contract speed.

The "Marseillaise," a sister-ship to the "Sully," has also been carrying out her trials at Brest; during a 24 hours' coal-consumption trial, at 10,000-H.P., the engines actually developed 10,658-I.H.P., giving a mean speed of 18·5 knots, with a coal consumption of 654 gr. (1·3 lbs.) per H.P. per hour, and of 64 kg. (141 lbs.) per square metre of grate surface per hour; her boilers, which are of the Belleville type, worked without the least trouble. On a further trial at 14,000-H.P., the engines developed 14,593-I.H.P., the consumption being 700 gr. (1·4 lbs.) per H.P. per hour, and 93 kg. (204·97 lbs.) per square metre of grate surface per hour. During a preliminary full-speed run of 6 hours, the engines developed 20,700-I.H.P., being 200-H.P. over the contract, giving a speed of 21 knots, with a coal consumption of 16 kr. (35·8 lbs.) per square foot of grate surface. Owing to the strike of the special stoker-staff the trials are being carried out by ordinary stokers from the fleet, as at Toulon, and in these circumstances the economical working of the Belleville boilers, with which the cruiser is fitted, is considered highly satisfactory.

Some alterations are to be made in the screws of the armoured cruiser "Desaix," with a view of reducing the excessive vibration; similar alterations have recently been made in the screws of the "Châteaurenault," in China, with excellent results.

The new second-class battle-ship "Henri IV." has made a successful full-speed trial of 4 hours at Cherbourg, the speed maintained being 17·2 knots, or ·2 over the contract.

The new torpedo-boat destroyer "L'Arbalète," lately built at Havre, by the celebrated Normand firm, promises to beat the records made by this type of vessel up to the present in France. On her way round to Cherbourg, she made 30·7 knots, and on her first trial, with the engines making 313 revolutions, she maintained a speed of 31·5 knots, being 3·5 knots over the contract. With a view of improving her sea-going qualities, the "L'Arbalète's" anchors are stowed on each side, nearly amidships, instead of in the bows.

The Submarines in 1903.—The submarine boat flotilla ought to be increased during the current year by 12 new units, but as their construction has not proceeded as rapidly as was expected, it is more than likely that only half that number will be really ready for service; they are nearly all of the "Naïade" type, now nearly completed at Cherbourg.

According to the Naval Budget for 1903, provision has been made for only 3 submarine boat stations, viz.:—1, Cherbourg; 2, Rochefort-La-Pallice; 3, Toulon.

The boats will be distributed as follows:—

1. Cherbourg.—This station is by far the most important. There is a capitaine de frégate in command, and there are already in commission 5 submersibles viz., the "Narval," "Sirène," "Triton," "Silure," "Espadon," and 3 submarines, the "Morse," "Français," "Algérien." There ought, in addition, to be completed and commissioned for various periods this year, the submarines "Naïade" (10 months), "Protée" (9 months), "Lynx" (7 months), "Ludion" (6 months). The fact that the "Naïade," which should have been commissioned for 10 months, was not in the middle of May even ready to begin her trials, shows clearly that the dates of commission are only approximate, and that the programme is hardly likely to be carried into effect.

2. Rochefort-La-Pallice.—The submarines at this station are those which are built at Rochefort, where they return for repairs and supplies,

but their general station, when completed, is in the basin at Pallice. The senior lieutenant in command is commandant of the station.

At the present time there are three units at the station, the submarines "Farfadet," "Gnôme," and "Korrigan," while the "Lutin" is nearly ready; they are all four vessels of the same class. According to the Estimates, there should also be in commission for 3 months the small submarines of the "Naïade"class, "Loutre" and "Castor," which are being built in the dockyard in a closed shed, to which no unauthorised persons are allowed admittance.

3. Toulon.—It is curious that this port, which long in advance of any of the others was supplied with the two first submarines, at the present time is the worst provided with them.

The only two submarines in commission are the "Gymnote" and "Gustave Zédé." According to the Budget, however, 6 small submarines of the "Naïade" type should be in commission for the following periods :—"Perle" (3 months), "Esturgeon" (7 months), "Bonite" (6 months), "Thon" (5 months), "Souffleur" (3 months), "Dorade" (1 month).

But there are some other submarines which ought to commence their trials before the end of 1903, and be ready for active service early in 1904. These are the "Phoque," "Otarie," "Méduse," and "Oursin" at Rochefort, and the "Grondin," "Anguille," and "Alose" at Toulon. These are all of the "Naïade" type, 77 feet long; 7 feet 6 inches beam, with a displacement of 68 tons, and a speed of 8 knots.

The submarine stations will require this year a considerable effective, viz., 41 officers, 3 warrant officers, 3 chief petty officers, 65 petty officers, 240 quartermasters and 99 seamen, or a total of 451 officers and men, at a cost of 1,095,175 francs (£43,807).—*Le Yacht*, *Le Temps*, and *Le Petit Var*.

GERMANY.—The following are the principal promotions and appointments which have been made : Rear-Admirals—Fritze to command of the 2nd Squadron formed for the naval manœuvres; von Eickstedt to be second-in-command of 2nd Squadron; Borckenhagen to command of Cruiser Division; Schmidt to be second-in-command of the 1st Squadron; Breusing to be Chief of the Staff of the Manœuvre Fleet. Kapitäns zur See — Breusing and Siegel to be Rear-Admirals; Büllers to be Chief of the Nautical Division at the Ministry of Marine; Paschen to be Chief of the Staff of the North Sea Command. Korvetten-Kapitän—Souchon to be Chief of the Staff of the 2nd Squadron.

It is intended that in future, the Cruiser or Scouting Division of the First Squadron is to be under the command of a rear-admiral, who will be responsible for the proper training of the ships in their responsible duties. Rear-Admiral Borckenhagen, the first flag officer to be appointed to this new command, has been for the last twelve months second-in-command of the 1st Squadron; it is intended that the new division shall be composed of two first-class and six third-class cruisers.

The Manœuvre Fleet.—An Imperial Decree of the 30th May, directs that the Manœuvre Fleet is to assemble at Wilhelmshaven on the 15th August, and is to disperse at Kiel on the 15th September. The Fleet is to consist of the 1st and 2nd Squadrons, with the 1st and 2nd Torpedo-boat Flotillas.

Admiral von Koester, who will again this year command the Manœuvre Fleet, will hoist his flag on board the first-class battle-ship "Kaiser

Wilhelm II," which will be temporarily detached from the 1st Squadron. Rear-Admiral Fritze hoisted his flag on the 4th inst. on board the third-class battle-ship "Baden," at Wilhelmshaven, in command of the 2nd Squadron, which, until the mobilisation of the Reserve Division of the Baltic, the date for which has not yet been fixed, will consist only of the two standing ships (in commission) in each of the two Reserve Divisions; Rear-Admiral von Eickstedt will hoist his flag as the second-in-command on board the coast-defence battle-ship "Hildebrand," when the order to mobilise the remaining Reserve ships is given.

The 1st Squadron, under the command of Admiral Prince Henry of Prussia, is at present constituted as follows :—

First-class battle-ships—"Kaiser Friedrich III." (flag-ship of Commander-in-Chief), "Kaiser Wilhelm der Grosse," "Kaiser Wilhelm II.," "Kaiser Barbarossa," "Kaiser Karl der Grosse," "Wittelsbach" (flag-ship of Rear-Admiral Second-in-Command), "Zähringen," "Wettin."

The 2nd Squadron, under the command of Rear-Admiral Fritze, is to be composed as follows :—

Third-class battle-ships—"Baden" (flag-ship of Commander-in-Chief), "Württemberg."

Coast-defence battle-ships—"Hildebrand," (flag-ship of Second-in-Command), "Heimdall," "Hagen," "Beowulf."

Cruiser Division, under the command of Rear-Admiral Borckenhagen, is composed as follows :—

First-class armoured cruiser—"Prinz Heinrich" (flag-ship).

Second-class cruiser—"Victoria Luise."

Third-class cruisers—"Amazone," "Ariadne," "Frauenlob," "Niobe," "Medusa," "Arcona," "Blitz."

The second-class cruiser "Freya" (gunnery sea-going training-ship) is to be attached to the Manœuvre Squadron from 31st August to the conclusion of the manœuvres, and the third-class cruiser "Nymphe," the "Neptun," and the "Pelikan" torpedo-depôt ship are to be similarly attached from the 31st August to the 6th September; the small training-ship "Grille" is also to be attached to the fleet as a despatch-vessel.

The First and Second Torpedo-boat Flotillas are under the command of Korvetten-Kapitäns Hipper and Maas respectively. The First Flotilla is composed of G 110 as senior officer's ship, and the A (V.) torpedo-boat division, viz. : Nos. G 108, 109, 111, 112, and 113; the B (IV.) division, viz. : Nos. S 102, 103, 104, 105, and 107.

The Second Flotilla is composed of S 119 as senior officer's ship, and the C (II.) Torpedo-Boat Division, viz. : Nos. S 114, 115, 116, 117, and 118; the D (III.) Division, viz. : Nos. D 7, S 66, 69, 70, 71, 72, and 73. Although styled torpedo-boats, all the above-named vessels, with the exception of those of the D (III.) Division, are really destroyers, having a displacement of 350 tons, and a speed varying from 27·5 to 29 knots.

The Estimates for 1903.—The Estimates for 1903 amount to 222,425,062 marks (£11,121,253 2s), as against 204,994,089 marks (£10,249,704 9s.) voted for 1902, showing an increase of 17,430,973 marks (£871,548 13s.). The following are the principal items :—

Ordinary Permanent Estimates.

	Proposed 1903. Marks.	£ s.	Voted 1902. £ s.
Imperial Ministry of Marine and Naval Cabinet	1,574,380	= (78,719 0)	72,433 0
Naval Headquarter Staff	190,445	(9,522 5)	9,777 10
Observatories, etc.	339,405	(16,970 5)	17,095 5
Station Accounts Department	417,745	(20,887 5)	19,932 5
Legal Department	107,920	(5,396 0)	4,836 0
Chaplains' Department and Garrison Schools	104,712	(5,235 12)	5,024 0
Pay of Officers and men	20,972,019	(1,048,600 19)	974,457 6
Maintenance of Fleet in Commission	23,951,621	(1,197,581 1)	1,098,423 18
Allowances for Officers and Men	1,499,474	(74,973 14)	71,174 15
Clothing	357,711	(17,885 11)	17,719 5
Barrack and Garrison Administration, etc. ...	1,204,868	(60,243 8)	58,743 11
Lodging Allowance	3,226,866	(161,343 6)	149,642 4
Medical Department	1,525,697	(76,289 17)	71,487 13
Travelling, Transport, and Freight Charges ...	2,970,815	(148,540 15)	130,009 3
Training Establishments	345,971	(17,298 11)	16,221 17
Maintenance of the Fleet and Dockyards ...	24,072,354	(1,203,617 14)	1,140,158 9
Ordnance, Arms, and Fortification	8,107,094	(405,354 14)	374,084 11
Accountant-General's Department	656,351	(32,817 11)	29,320 7
Pilotage and Surveying	588,748	(29,437 8)	27,200 0
Miscellaneous Expenses	1,182,174	(59,108 14)	55,231 0
Administration of Kiau-Chau Protectorate ...	71,822	(3,591 2)	2,705 0
Total	93,468,192	(4,673,409 12)	4,345,676 19

Special Ordinary Estimates.

Shipbuilding Programme for 1903.

For the construction of the following ships :—	Marks.	£ s.
The first-class battle-ship "Mecklenburg" (*F*), 4th and final Vote	5,000,000	= (250,000 0)
The first-class battle-ship "Schwaben" (*G*), 4th and final Vote	5,000,000	(250,000 0)
" " " "Braunschweig" (*H*), 3rd Vote	4,650,000	(237,500 0)
" " " "J," 3rd Vote	4,650,000	(237,500 0)
" " " "K" and "L," a 2nd Vote for each of	5,350,000	(267,500 0)
" " " "M" and "N," a 1st Vote for each of	2,600,000	(130,000 0)
The first-class armoured cruisers "Friedrich Carl" (Ersatz "König Wilhelm"), 3rd and final Vote...	5,090,000	(254,500 0)
" " " Ersatz "Kaiser," 2nd Vote ...	4,200,000	(210,000 0)
" " " Ersatz "Deutschland," 1st Vote	3,200,000	(160,000 0)
The third-class cruiser "Frauenlob" (*G*), 3rd and final Vote	340,000	(17,000 0)
" " " "Arcona" (*H*), 3rd and final Vote...	340,000	(17,000 0)
" " " "Undine" (*I*), 3rd and final Vote...	340,000	(17,000 0)
" " " "K," 2nd Vote	2,400,000	(120,000 0)
" " " "L," "	2,400,000	(120,000 0)
" " " Ersatz "Zieten," 2nd Vote	2,400,000	(120,000 0)
" " " "M," 1st Vote	1,225,000	(61,250 0)
" " " Ersatz "Mercur," 1st Vote	1,225,000	(61,250 0)
The first-class gun-boat "B," 2nd and final Vote	800,000	(40,000 0)
River gun-boat	500,000	(25,000 0)

	Marks.	£	s.
For the construction of a Division of Torpedo-boats, 2nd and final Vote	2,140,000	(107,000	0)
" " " 1st Vote	3,100,000	(155,000	0)
For the construction of a Surveying Vessel...	500,000	(25,000	0)
For the re-construction of the Ships of the "Siegfried" class, 3rd and final Vote	4,300,000	(215,000	0)
For the re-construction of the Ships of the "Brandenburg" class, 2nd Vote	1,225,000	(61,250	0)
For the fitting of Cooling and Ventilating Apparatus for Ships' Magazines, 2nd Vote	1,000,000	(50,000	0)
For the thorough overhaul and repair of the first-class cruiser "Kaiserin Augusta" and second-class cruiser "Irene," 1st Vote	2,000,000	(100,000	0)
For the construction of a sea-going Dredger, 1st Vote ...	500,000	(25,000	0)
Total	74,375,000	(3,718,750	0)
For the Gun and Torpedo Armaments of New Ships ...	30,286,000	(1,514,300	0)
Miscellaneous Expenditure: Dockyards, etc.	5,345,870	(267,293	10)
	110,006,870	(5,500,343	10)
From which has to be deducted, credited in the Extra-ordinary Estimates	38,495,000	(1,924,750	0)
Leaving Total...	71,511,870	(3,575,593	10)

Summary.

	1903. Marks.	£	s.	1902. £	s.	Increase. £	s.
Ordinary Permanent Estimates	93,468,192	(4,673,409	12)	4,345,676	19	(+327,732	13)
Shipbuilding, Armament, etc.	71,511,870	(3,575,593	10)	3,386,727	10	(+188,866	0)
Extraordinary Expenditure...	57,445,000	(2,872,250	0)	2,517,300	0	(+354,950	0)
Total	222,425,062	(11,121,253	2)	10,249,704	9	(+871,548	13)

The Personnel of the Fleet.—The following are the numbers voted of the officers of different ranks on the Active List of the Fleet :—3 admirals, 5 vice-admirals, 11 rear-admirals, 62 captains, 130 commanders, 245 captain-lieutenants, 674 lieutenants, 433 midshipmen, and 150 cadets. There are further 1 retired rear-admiral, 14 retired captains, 21 retired commanders, and 1 retired lieutenant employed on special duties, while 36 captain-lieutenants and 62 lieutenants are employed on ordnance and torpedo-duties in the various dockyards and coast stations. The total number of commissioned officers of the military branch actively employed is thus 1,169; showing an increase of 115 over last year, viz. : 1 vice-admiral, 5 captains, 11 commanders, 25 captain-lieutenants, and 73 lieutenants, while there is an increase to the junior officers' list of 18.

The Marine battalions have as their staff :—1 inspector of marine infantry, 2 battalion commanders, 13 captains, 10 first-lieutenants, and 20 lieutenants, these numbers being the same as last year.

The Engineering Department consists of :—5 chief engineers, 33 staff-engineers, 68 engineers first-class, and 101 engineers, being an increase of 4 staff-engineers, 5 engineers first-class, and 15 engineers.

The Medical Department consists of :—1 medical director-general (with the rank of rear-admiral), 3 inspectors-general, 34 fleet-surgeons, 68 staff-surgeons, 40 surgeons, and 40 assistant-surgeons; showing an increase of 3 fleet-surgeons, 4 staff-surgeons, 2 surgeons, and 2 assistant surgeons.

In the Accountant Department are :—16 staff-paymasters, 133 senior paymasters and paymasters, 8 clerks, and 59 assistant clerks; showing an increase of 1 staff-paymaster, 14 paymasters, and 6 assistant clerks.

The Seamen Divisions number :—73 chief warrant officers, 150 warrant officers, and 13,453 petty officers and men, with 1,100 boys, a total of 14,553; showing an increase of 4 chief and 26 warrant officers, and 830 petty officers and men, there is a reduction, however, of 200 in the number of boys.

The Dockyard Divisions number :—253 chief warrant officers, 508 warrant officers, and 9,119 petty officers and men, of whom 667 chief and warrant officers, with 7,271 petty officers and men form the engine-room *personnel* of the Fleet, which shows an increase of 58 chief and warrant officers, and 679 petty officers and men over last year, with a total increase in the divisions of 62 chief and warrant officers, and 818 petty officers and men.

The Torpedo Divisions number :—78 chief warrant officers, 154 warrant officers, and 3,743 petty officers and men, of whom 47 chief and warrant officers, and 1,779 petty officers and men are of the seamen class, while 185 chief and warrant officers, and 1,964 petty officers and men are of the engineering branch; there is an increase in the division of 1 chief warrant officer, and 103 petty officers and men of the seamen branch, and of 15 chief and warrant officers, and 369 petty officers and men of the engineering branch, or a total increase in both branches of 16 chief and warrant officers, and 472 petty officers and men.

The Seamen-Artillery Division numbers :—11 chief warrant officers, 18 warrant officers, and 2,358 petty officers and men; showing an increase of 1 warrant officer and 90 petty officers and men.

The Marine Infantry number :—191 non-commissioned officers and 1,038 men, a similar strength to last year.

The Sick-bay Staff consists of :—280 petty officers and men of different grades; and there are 220 ships' stewards and assistants, showing an increase of 67.

The total strength of the active *personnel* of the Navy stands at 35,685, viz. :—1,722 officers, exclusive of midshipmen and cadets, and 33,963 warrant officers, petty officers, men, and boys, being an increase of 153 officers and 2,124 men over last year.

The Matériel of the Fleet.—The *matériel* of the Fleet, including ships under construction, is made up as follows :—Battle-ships, 33, to be increased to 38, in accordance with the Navy Act of 1900. Of these there are 12 first-class battle-ships completed; 4 in different stages approaching completion; 2 to be launched this year (1 of these was launched on 26th May), and 2 others to be laid down immediately; 5 third-class battle-ships, and 8 fourth-class, these last are rated as coast-defence ships, and will, with the third-class ships, be in due course replaced by first-class vessels.

Large cruisers, 12, to be increased to 14. Of these there are 3 first-class armoured cruisers completed; 1 approaching completion, 1 under construction, and 1 to be laid down; the remaining 6 are protected vessels.

Small cruisers, 34, to be increased to 38. Of these 27 are completed; 2 approaching completion; 3 under construction, and 2 to be laid down.

There are 6 first-class gun-boats and 4 river gun-boats, 2 of which are completed, 1 completing, and 1 to be laid down.

The torpedo flotilla consists of 41 of what are practically destroyers, all, with the exception of three, having displacements of from 300 to 380 tons, with a speed of from 25 to 30 knots; there are in addition 45 smaller sea-

going torpedo-boats, and some 38 second-class boats for harbour and coast-defence. Six destroyers are under construction and approaching completion, and 6 are to be commenced.

The Training Squadron consists of :—6 sea-going cadet and boy school frigates; 7 gunnery training-ships, 1 torpedo school-ship, and 2 submarine mine training-ships.

The Special Service ships are :—2 Imperial yachts, 3 surveying ships, 1 stationaire at Constantinople, and a torpedo-depôt ship with her tender.

The cost of the Fleet in commission is distributed as follows :—

1. The Battle Fleet.

	Marks.	£	s.
Active Squadron	4,880,170	= (244,008	10)
Reserve ,, ...	1,538,454	(76,922	14)
Scouting ,, ...	2,970,502	(148,525	2)
Torpedo Flotillas...	1,591,243	(79,562	3)
	10,980,369	(549,018	9)

showing an increase of 1,533,462 marks (£76,673 2s.), as compared with last year.

2. Ships on Foreign Service.

	Marks.	£	s.
The Cruiser Squadron (in China)	4,006,364	= (200,318	4)
The East Asian Station ...	1,306,284	(65,314	4)
The Australian ,, ...	670,110	(33,505	10)
The West African ,, ...	383,130	(19,156	10)
The East African ,, ...	501,204	(25,060	4)
The American ,, ...	1,413,036	(70,651	16)
The Constantinople ,, ...	77,208	(3,860	8)
Surveying duties	146,232	(7,311	12)
	8,503,568	(425,178	8)

showing a decrease of 600,860 marks (£30,043) as compared with last year.

3. Training-ships.

	Marks.	£	s.
Cadets' and Boys' Training-ships	1,093,512	= (54,675	12)
Gunnery School-ships	1,394,495	(69,724	15)
Torpedo School-ships	750,090	(37,504	10)
Submarine Mining School-ships	22,722	(1,136	2)
Coast Pilotage School-ships ...	54,872	(2,743	12)
	3,315,691	(165,784	11)

showing an increase of 345,138 marks (£17,256 18s.) as compared with last year.

4. Special Service Ships.

	Marks.	£	s.
Imperial Yacht "Hohenzollern"	308,088	= (15,404	8)
Surveying-ships (Home waters)	41,158	(2,057	18)
Torpedo Trials	644,172	(32,208	12)
General Trials	205,212	(10,260	12)
Fishery Protection	219,470	(10,973	10)
	1,418,100	(70,905	0)

showing an increase of 579,108 marks (£28,955 8s.) as compared with last year.

	Marks.	£ s.
5. For Special Purposes	385,877 =	(19,293 17)

an increase of 68,697 marks (£3,434 17s.) as compared with last year.

Combined Total.

	Marks.	£ s.
Battle Fleet	10,980,369 =	(549,018 9)
Foreign Service	8,503,568	(425,178 8)
Training-ships	3,315,691	(165,784 11)
Special Service Ships	1,418,100	(70,905 0)
Special Purposes	385,877	(19,293 17)
Total	24,603,605	(1,230,180 5)

showing an increase of 1,925,545 marks (£96,277 5s.) as compared with last year.—*Etat für die Verwaltung der Kaiserlichen Marine, 1903.*

The following is the composition of the squadrons on foreign stations :—

The Cruiser Squadron (temporarily in Chinese waters), under the command of Vice-Admiral Geissler, is composed as follows :—

First-class armoured cruiser—"Fürst Bismarck" (flag-ship).
Second-class cruisers—"Hansa" (flag-ship of Rear-Admiral Graf von Baudissin, Second-in-Command), "Hertha."
Third-class cruisers—"Thetis," "Geier."

The Cruiser Division (temporarily on the East Coast of America), under the command of Commodore Scheder, is composed as follows :—

Second-class cruiser—"Vineta" (flag-ship).
Third-class cruisers—"Gazelle," "Falke."
First-class gun-boat—"Panther."

Australian Station :—
Third-class cruisers—"Cormoran," "Seeadler," "Condor."
Surveying-ship—"Möwe."

East African Station :
Third-class cruisers—"Bussard," "Sperber."

West African Station :—
First-class gun-boat—"Habicht."
Surveying-ship—"Wolf."

China Station :—
First-class gun-boats—"Jaguar," "Iltis," "Tiger," "Luchs."
River gun-boats—"Vorwärts," "Schamien."
Destroyer—"Taku," and a torpedo-boat.
These vessels are under the orders of the Vice-Admiral commanding the Cruiser Squadron.

Mediterranean Station :—
Special-service ship—"Loreley."

UNITED STATES.—*Naval Appropriation Bill.*—The Naval Appropriation Bill, H.R. 17288, as reported in the House 6th February by the Committee

on Naval Affairs; covers the following appropriations, which are here compared with the estimates and the appropriation for last year :—

Naval Establishments.	1903. Dollars.	Estimates, 1904. Dollars.	Carried by Bill, 1904. Dollars
Pay of the Navy	16,138,199.00	17,106,099.00	17,706,099.00
Pay, miscellaneous	600,000.00	600,000.00	600,000.00
Contingent, Navy	10,000.00	10,000.00	15,000.00
Emergency Fund	100,000.00	100,000.00	40,000.00
Bureau of Navigation ...	1,294,671.25	1,157,125.00	1,575,723.00
Bureau of Ordnance	3,109,006.75	2,761,006.75	3,061,006.75
Bureau of Equipment ...	5,306,402.52	6,018,602.52	5,418,602.52
Bureau of Yards and Docks	748,760.58	758,903.70	748,903.70
Public Works, Bureau of Yards and Docks	7,649,325.00	5,814,440.00	3,757,940.00
Public Works, Bureau of Navigation :—			
Naval Academy	500,000.00	1,000,000.00	60,000.00
Naval training station, California	31,500.00	4,250.00	4,250.00
Naval training station, Rhode Island	114,280.00	232,000.00	232,000.00
Naval War College ...	60,000.00	.....	.....
Public Works, Bureau of Ordnance	392,200.00	421,800.00	121,800.00
Public Works, Naval Observatory	5,000.00	.....	5,000.00
Bureau of Medicine and Surgery	310,000.00	485,000.00	510,000.00
Bureau of Supplies and Accounts	3,803,932.28	3,853,978.34	3,853,978.34
Bureau of Construction and Repair	8,585,824.25	8,367,024.25	8,367,024.25
Bureau of Steam Engineering	3,802,900.00	4,007,900.00	3,907,900.00
Naval Academy	229,905.77	284,105.77	269,397.34
Marine Corps :—			
Paymaster	1,831,129.23	1,839,046.75	1,839,046.75
Quartermaster	1,355,316.50	1,379,116.50	1,529,116.50
Increase of the Navy :—			
Equipping yard for Government shipbuilding	175,000.00	.....	.....
Construction and machinery	13,303,010.00	15,025,632.00	15,025,632.00
Armour and armament	9,000,000.00	10,000,000.00	10,000,000.00
Equipment	400,000.00	400,000.00	400,000.00
Two steel ships, training vessels, propelled by sail	.....	750,000.00	.....
One wooden brig, training vessel, propelled by sail	.....	50,000.00	.....
Grand total	78,856,363.13	82,426,030.58	79,048,420.15

	1903. Dollars.	Estimates 1904. Dollars.	Bill, 1904. Dollars.
Pay of the Navy	16,138,199.00	17,106,099.00	17,706,099.00
Pay, miscellaneous	600,000.00	600,000.00	600,000.00
Contingent, Navy	10,000.00	10,000.00	15,000.00
Emergency Fund	100,000.00	100,000.00	40,000.00
Total	16,848,199.00	17,816,099.00	18,361,099.00
Some of the appropriations are as follows :—			
Gunnery exercises	12,000.00	120,000.00	120,000.00
Athletic exercises and sports	.....	5,000.00	5,000.00
Public Works Bureau of Yards and Docks :—			
Boston, Mass.	702,700.00	495,500.00	290,500.00
Cavite, P.I.	233,500.00	320,000.00	320,000.00
Charleston, S.C.	913,300.00	699,500.00	.....
Island of Guam	.....	10,000.00	10,000.00
Key West, Fla.	118,950.00	165,000-00	165,000.00
League Island, Pa. ...	522,300.00	359,200.00	309,200.00
Mare Island, Cal.	225,500.00	273,500.00	50,000.00
New London, Conn. ...	41,000.00	2,500.00	2,500.00
New Orleans, La.	339,000.00	76,800.00	111,800.00
New York, N.Y.	560,500.00	501,000.00	282,500.00
Norfolk, Va.	344,000.00	528,000.00	193,000.00
Pensacola, Fla.	2,500.00	143,000.00	23,000.00
Portsmouth, N.H. ...	872,575.00	947,000.00	917,000.00
Puget Sound, Wash.	810,500.00	310,200.00	295,200.00
Tutila	93,000.00	34,000.00	34,000.00
Washington, D.C. ...	240,000.00	368,740.00	224,240.00
Procuring, producing, preserving and handling ordnance *matériel* etc.	800,000.00	1,200,000.00	1,500,000.00
Reserve supply of ammunition	500,000.00	500,000.00	500,000.00
Conversion of 6-inch guns to rapid-fire ...	25,000.00	25,000.00	25,000.00
Smokeless powder	500,000.00	500,000.00	500,000.00
New battery for New York	.....	100,000.00	100,000.00
Naval Gun Factory	127,000.00	160,000.00	160,000.00
Public Works, Bureau of Ordnance :—			
Ad. magazine, Iona Island	49,500.00	14,200.00	14,200.00
Imp. magazine Dover Lake	80,000.00	19,600.00	19,600.00
Imp. naval magazine, St. Juliens Creek. ...	46,500.00	11,000.00	11,000.00

Public Works—*contd.*	1903. Dollars.	Estimates 1904. Dollars.	Bill, 1904. Dollars.
New buildings and improvements at proving ground	23,000.00	50,500.00	50,500.00
New naval magazine near Boston	.....	300,000.00	.....
Imp. at Torpedo station, Newport, R.I.	.....	25,000.00	25,000.00
Water system etc., at Fort Norfolk, Va. ...	.....	1,500.00	1,500.00
Construction plants :—			
Portsmouth, N.H. ...	30,000.00	20,000.00	20,000.00
Boston Mass.	50,000.00	50,000.00	50,000.00
New York, N.Y.	50,000.00	50,000.00	50 000.00
League Island, Pa. ...	50,000.00	30,000.00	30,000.00
Norfolk, Va.	50,000.00	30,000.00	30,000.00
Mare Island Cal.	50,000.00	30,000.00	30,000.00
Puget Sound, Wash.	75,000.00	75,000.00	75,000.00
New Orleans, La.	15,000.00	25,000.00	25,000.00
Steel ammunition lighter, Cavite P.I.	.....	30,000.00	30,000.00
For tests of liquid fuel for Naval purposes ...	20,000.00	.....	.....
Improvement of steam engineering plants ...	360,000.00	185,000.00	85,000.00
Experiment station and testing laboratory ...	.....	400,000.00	400,000.00

There is no appropriation for the following, for which the amounts named here were appropriated last year. Reserve guns, 500,000 dollars; naval station, San Juan, P.R., 50,000 dollars; dry docks, 1,050 000 dollars; new batteries for Newark, Albany and New Orleans, 375,000 dollars; travelling cranes, New York 11,000 dollars; new magazine, Fort Mifflin, 5,000 dollars; sea wall at Goat Island, 28,000 dollars; improvements at Fort Lafayette magazine, 25,000 dollars; Mare island magazine, 80,000 dollars; Puget Sound magazine, 50,000 dollars; construction plant, Cavite, 50,000 dollars. Under the head of Marine Corps, 16,000 dollars is allowed for a verandah at Pensacola, Fla., and 25,748 dollars for electric lights at New York. Nothing for the other barracks, which last year got special appropriations amounting to 47,000 dollars.

The Secretary of the Navy is directed "to appoint a board of naval officers, whose duty it shall be to recommend a site or sites for one naval magazine on the New England coast, north of Cape Cod, suitable for the use of the Boston and Portsmouth Navy Yards; and, if upon private land, to estimate its value and ascertain as nearly as practicable the cost for which it can be purchased or acquired, and also to estimate the cost of necessary buildings, grading and filling in, building roads and walks, improvements of water front, necessary wharves and cranes, railroad tracks and rolling stock fire and water service, and for general equipment of said naval magazine. The board shall make a full and detailed report to the Secretary of the Navy, who shall transmit such report, with his recommendations thereon, to the next session of Congress."

The grades of the active list of the Navy hereinafter designated shall be so increased that there shall be 30 additional lieutenant commanders, in all 200; 50 additional lieutenants, in all 350; such total numbers of lieutenants (junior grade) and ensigns as may qualify for said grades under existing law and the provisions of this act; 30 additional surgeons with the rank of lieutenant commander, in all 85; 120 additional passed assistant and assistant surgeons with the rank respectively of lieutenant and lieutenant (junior grade), in all 230; 2 additional pay inspectors, in all 15; 36 additional paymasters, in all 76; 26 additional passed assistant and assistant paymasters, in all 96; 29 additional naval constructors and assistant naval constructors, in all 75; 1 additional civil engineer, in all 28; and 12 assistant civil engineers, of whom 6 shall have the rank of lieutenant (junior grade) and 6 the rank of ensign: Provided, that assistant civil engineers, during the first 5 years after date of appointment, shall receive per annum, when on duty, 1,500 dollars; when on leave or waiting orders, 1,000 dollars; during the second 5 years after such date, when on duty, 1,800 dollars; when on leave or waiting orders, 1,200 dollars; and after 10 years from such date, when on duty, 2,100 dollars, and when on leave or waiting orders, 1,400 dollars. And provided further, that promotions in the Corps of Civil Engineers shall be after such examination as the Secretary of the Navy may prescribe.

The increase in the grade of lieutenant commander and lieutenant provided for in this act shall be filled by promotion each year of not exceeding 25 per centum of the total number of the increase in each of the said grades; and not more than 25 assistant surgeons, not more than 20 assistant paymasters, nor more than 5 assistant naval constructors, nor more than 3 assistant civil engineers, in addition to those necessary to fill vacancies in said grades, shall be appointed in any one calendar year.

Hereafter in each calendar year there may, under the restrictions imposed by existing law, be appointed from the boatswains, gunners and warrant machinists of the Navy 12 ensigns.

There shall be allowed at the Naval Academy 2 midshipmen for each Senator, Representative and Delegate in Congress, 2 for the District of Columbia and 5 each year at large: Provided, that the additional Congressional appointments authorised by this act shall be made at such times as may be determined by the Secretary of the Navy, who shall equitably distribute the increase among the several States, Districts and Territories, so that ultimately, if practicable, each Senator, Representative and Delegate may recommend for appointment during each Congress one midshipman.

The Secretary of the Navy shall as soon as practicable after the fifth day of March in each year notify in writing each Senator, Representative and Delegate in Congress of any vacancy which may be regarded as existing in the State, District or Territory which he represents, and the nomination of a candidate to fill such vacancy shall be made upon the recommendation of the Senator, Representative, or Delegate. Such recommendation shall be made by the first day of May of that year, and if not so made the Secretary of the Navy shall fill the vacancy by the appointment of an actual resident of the State, District or Territory in which the vacancy exists, who shall have been for at least 2 years immediately preceding his appointment an actual bona fide resident of the State, District or Territory in which the vacancy exists and shall have the qualifications otherwise prescribed by law:

Nothing contained in this act shall affect the officers of the Navy who may have been or may hereafter be advanced in rank under existing pro-

visions of law by which they become extra numbers in their respective grades, or operate to vacate the commission of any officer now in the Service.

That from and after the passage of this Act, and in order to further increase the efficiency of the Marine Corps, the following additional officers, non-commissioned officers, drummers, trumpeters, and privates to those now provided by law for said corps, are hereby authorised and directed, namely: 1 colonel, 1 lieut.-colonel, 5 majors, 12 captains, 25 first lieutenants, 12 second lieutenants, 1 assistant-adjutant and inspector, with the rank of lieut.-colonel, 2 assistant-adjutants and inspectors with the rank of major, 1 assistant-quartermaster with the rank of lieut.-colonel, 5 assistant-quartermasters with the rank of captain, 1 assistant-paymaster with the rank of lieut.-colonel, 1 assistant-paymaster with the rank of captain, 1 sergeant-major, 40 quartermaster-sergeants 12 first sergeants, 65 sergeants, 55 corporals, 10 drummers, 10 trumpeters, and 527 privates: Provided that the vacancies now existing in the line and the staff departments of the Marine Corps, and those created by this Act below the grade of brigadier-general shall be filled, respectively, first by promotion by seniority and then by selection and appointment as now provided by law, excepting that vacancies in the grade of second lieutenant shall be filled first, as far as practicable, from graduates of the Naval Academy each year on completing the prescribed course at the Naval Academy, exclusive of the probationary tour of sea service before final graduation, then from meritorious non-commissioned officers and from civil life, between the ages of 21 and 27 years: Provided, that the commissions of officers now in the Marine Corps shall not be vacated by this act: And provided further that officers selected for appointment to fill vacancies in the grade of field officers in any of the staff departments shall be taken from officers on the active list not below the grade of captain, and who has seen not less than 10 years' service as commissioned officers in the Marine Corps. And that appointment to the grade of captain in any of the staff departments shall be made from officers on the active list of the Marine Corps not below the grade of first lieutenant.

And no law shall be construed to entitle marines on shore duty to any rations, or commutation thereof, other than such as now are or may hereafter be allowed to enlisted men in the Army: Provided, however, that when it is impracticable or the expense is found greater to supply marines serving on shore duty in the island possessions and on foreign stations with the Army ration, such marines may be allowed the Navy ration or commutation therefor.

That for the purpose of further increasing the naval establishment of the United States the President is hereby authorised to have constructed by contract 3 first-class battle-ships carrying the heaviest armour and most powerful ordnance for vessels of their class upon a trial displacement of not more than 16,000 tons, and to have the highest practicable speed and greatest radius of action, and to cost, exclusive of armour and armament, not exceeding 4,212,000 dollars each; 1 first-class armoured cruiser of not more than 14,500 tons trial displacement, carrying the heaviest armour and most powerful armament for vessels of its class, and to have the highest practicable speed and great radius of action, and to cost, exclusive of armour and armament, not exceeding 4,659,000 dollars; 2 steel ships, to be used in training landsmen and apprentices, to be propelled by sail, and to cost, exclusive of armament, not exceeding 370,000 dollars each; 1 wooden brig, to be used for training landsmen and apprentices at stations, to be propelled by sail and to cost, exclusive of

armament, not exceeding 50,000 dollars; and the contract for the construction of each of said vessels shall be awarded by the Secretary of the Navy to the lowest best responsible bidder, having in view the best results and most expeditious delivery; and in the construction of all of said vessels the provisions of the Act of August 3rd, 1886, entitled 'An Act to increase the naval establishment,' as to material for said vessels, their engines, boilers, and machinery, the contracts under which they are built, the notice of any proposals for the same, the plans, drawings, specifications, therefor, and the method of executing said contracts shall be observed and followed and, subject to the provisions of said Act all said vessels shall be built in compliance with the terms of said Act, and in all their parts shall be of domestic machinery; and the steel material shall be of domestic manufacture, and of the quality and characteristics best adapted to the various purposes for which it may be used, in accordance with specifications approved by the Secretary of the Navy: Provided further, that the Secretary of the Navy may build any or all of the vessels herein authorised in such navy yards as he may designate, should it reasonably appear that the persons, firms or corporations or the agents thereof, bidding for the construction of any of said vessels, have entered into any combination, agreement or understanding, the effect, object or purpose of which is to deprive the Government of fair, open and unrestricted competition in letting contracts for the construction of any of said vessels."—*Army and Navy Journal.*

MILITARY NOTES.

PRINCIPAL APPOINTMENTS AND PROMOTIONS FOR JUNE, 1903.

Brevet Colonel T. P. B. Ternan, C.M.G., D.S.O., from Lieut.-Colonel, h.p., to be A.A.G., District and Garrison Staff, Southern District, with the substantive rank of Colonel in the Army. Colonel J. C. Dalton, Colonel on the Staff, commanding Royal Artillery, Western District, is granted the local rank of Brigadier-General while commanding a Militia Infantry Brigade. Veterinary Lieut.-Colonel I. Matthews, C.B., A.V.D., is granted the temporary rank of Veterinary-Colonel, whilst employed as Principal Veterinary Officer in India. Major-General Sir W. F. Kelly, K.C.B., to be a Major-General on the Staff, to command the Infantry Brigade at Malta. Brevet Colonel G. L. C. Money, C.B., D.S.O., A.D.C., from Lieut.-Colonel, h.p., to be a Brigadier-General on the Staff, with the substantive rank of Colonel in the Army, and the temporary rank of Brigadier-General whilst so employed. Brevet Colonel H. Bowles, C.B., from Lieut.-Colonel, h.p., to be Director of Army Schools, with the substantive rank of Colonel in the Army. Lieut.-Colonel T. D'O. Snow, from the Northamptonshire Regiment, to be A.Q.M.G., IVth Army Corps, with the substantive rank of Colonel in the Army. Lieut.-Colonel E. H. Molesworth, I.A., an A.A.G. in India, is granted the substantive rank of Colonel in the Army. Colonel B. Duff, C.B., C.I.E., from D.A.G. in India, to command a Second Class District in India, and is granted the temporary rank of Brigadier-General whilst so employed. Lieut.-General Sir I. S. M. Hamilton, K.C.B., D.S.O., from Military Secretary at Head Quarters to be Quartermaster-General to the Forces. Colonel (local Major-General) Sir F. R. Wingate, K.C.B., K.C.M.G., D.S.O., A.D.C. to the King, Sirdar, Egyptian Army, to be Major-General in the Army. Major F. E. Younghusband, C.I.E., I.A., is granted the temporary rank of Colonel, whilst serving as a Commissioner for negotiating with China a settlement of the relations between India and Tibet.

INDIA.—*United Service Institution of India.*—The Council have chosen as the subject for their Gold Medal Essay for 1904 the following :—

The Influence and Application of Sea Power on Expeditions based on India.

The following are the conditions of competition :—

1. The candidates must be members of the United Service Institution of India.
2. Essays are limited to 16,000 words, and must be printed or type-written towards the cost of which Rs. 10 will be granted, on application, to the writer of each Essay.
3. When a reference is made to any work, the title of such work is to be quoted.

4. The Essays are to be strictly anonymous. Each must have a motto, and enclosed with the Essay there should be sent a *sealed* envelope with the motto written on the outside and the name of the candidate inside.
5. Essays not received by the Secretary on or before the 1st March, 1904, will not be accepted.
6. The Essays will be submitted for decision to referees chosen by the Council.
7. The name of the successful candidate will be made known at the annual meeting of the Council in May or June 1904, and his Essay will be printed in the *Journal*.
8. All Essays submitted are to become the property of the United Service Institution of India *absolutely*, and authors will not be at liberty to make any use whatsoever of their Essays without the sanction of the Council.

By order of the Council,

R. G. BURTON, *Major*,
Secretary.

Simla, 1st July, 1903.

CHINA.—*Re-organisation of "Banner" and "Green Flag" Troops.*—A recently issued Imperial Edict lays down that 3,000 men must be selected from the old Banner troops and made over to the Governor of Chih-li, in order to be trained in modern military methods under his supervision. The Edict also holds out the prospect that, should this experiment prove successful, a further re-organisation of the remaining Banner troops will gradually follow. With this decree the Chinese Government have initiated a reform which is of the greatest importance to both the military and political position of the Chinese Empire.

The first impulse to the above-mentioned re-organisation was given by both the then Governors-General of the Yangtze Valley, who reported frequently laying especial stress on the detriment caused to the Empire by the so-called Banner troops. These troops, originally the descendants of the old Manchu invading army of the seventeenth century, have remained, it is true, a species of warrior caste, but have in the course of time, through the admission to their ranks of Mongols and Chinese, completely lost their purity of race, as well as their former warlike spirit. Their strength may be reckoned at 200,000 men, of whom 120,000 are quartered in Pekin alone, the remainder being stationed in the provinces, especially in Chih-li. They took part neither in the Chino-Japanese war nor in the events of 1900, principally on account of their small military value.

It is not, however, in the Banner troops alone that the re-organisation will shortly take place, but also in the so-called "Green Flag" troops. The latter may be regarded as the remains of an old standing army dating from the seventeenth century. They are distributed amongst the whole of the eighteen Chinese provinces, and are under the orders, and at the entire disposal of, the Governors-General. There is no precise information with regard to their strength; on paper they are reckoned at 400,000 men; it is, however, an undoubted fact that the provincial officials return these high numbers in order that they may draw the maximum possible amount for maintenance, the greater portion of which goes into their own pockets. Hitherto, these troops have possessed

no military value, and their designation, "to maintain peace and order in the country," has no practical meaning. It is therefore clear that even with the re-organisation of these troops alone, the Chinese Government, from a military standpoint, will make a very great advance.

It is, however, not only the above-mentioned projects of reform regarding the Banner and Green Flag troops that give evidence of the seriousness of the military reforms laid down for the Chinese Empire, but also the latest Imperial decree recently issued with reference to the remodelling of the Imperial troops, and which, according to the *Ostasiatischen Lloyd*, reads as follows:—"Uniformity in armament and in organisation is the most important step in the creation of a thoroughly formidable army. Nevertheless, no pains are taken in the Provinces in the matter. The Governors-General entirely and criminally neglect this most important subject in the districts under them. We now find that the recently raised armies in Pi-Yang and Hu-pei, trained in the new methods, have made great progress in their organisation. It is therefore desired that the same methods should also be carried out in other Provinces, so that we may one day have the whole of Our army trained in the same manner. We, herewith, order the chief authorities in the Provinces of Ho-Nan, Shantung, and Shan-Si, to send their best officers and non-commissioned officers to the Pi-Yang army for duty, in order to receive the necessary instruction in modern methods of war, etc. Whilst officers and non-commissioned officers from the troops in Kiang-Su, Nganhwei, Kiang-Si, and Hu-Nan will be ordered, for the same purpose, to Hu-pei. When these have been trained they will return to their provinces, and instruct their own corps in a similar manner. The Governors-General of Chih-li and Hupeh will report to Us yearly any irregularity amongst the higher officials at their inspection of troops. Both Governors-General will submit to Us a draft of the necessary regulations on the subject."—*Internationale Revue über die Gesammten Armeen und Flotten.*

FRANCE.—*Grand Manœuvres.*—The *France Militaire* has recently published the following further information regarding the South-Eastern manœuvres, an account of which was given in the April JOURNAL:—

The South-Ea tern manœuvres will take place on the left bank of the Rhône, between Isère and Durance. The following troops have been selected by General Metzinger, Director of the manœuvres, to take part in them:—

1. The entire XIVth Army Corps, under General Grasset, who will thus have under his orders: the 27th and 28th Infantry Divisions; the 14th Cavalry Brigade, the 14th Artillery Brigade; the 14th Engineer Battalion, and the 14th Transport Squadron. In addition, the XIVth Army Corps will be reinforced by: the 4 Alpine Chasseur Battalions of the 27th Divisions, viz., the 12th, 14th, 28th, and 30th; the 2 Zouave Battalions from Lyons; and the Lyons District Brigade, consisting of the 157th and the 158th Infantry Regiments.

2. The XVth Army Corps, under General Mathis, will consist of: the 20th and 30th Infantry Divisions; the 15th Cavalry Brigade; the 15th Artillery Brigade; the 15th Engineer Battalion, and the 15th Transport Squadron. The XVth Army Corps will, in addition, be reinforced by the 7th, 24th, and 27th Alpine Chasseur Battalions, and a Colonial infantry regiment of 3 battalions, made up from the units quartered at Toulon.

3. The 6th Cavalry Division, from Lyons, under the command of General Oudard, consisting of the 5th Cuirassier Brigade and the 6th Dragoon Brigade.

The operations will commence on the 6th, and will conclude on the 16th September, and will be divided into three distinct periods, viz. :—

1st Period.—From the 6th to the 8th September, manœuvres of division against division in each army corps. The programme of these operations has not yet been definitely decided upon. The 9th September will be a day of rest.

2nd Period.—From the 10th to the 13th September inclusive, manœuvres of army corps against army corps. The Northern force will consist of the XIVth Army Corps and the District Brigade, and the Southern force will consist of the XVth Army Corps and the 6th Cavalry Division. During this period the theatre of operations will lie between Montélimar to the north, Orange to the south, the Rhône to the west, and Grignan to the east. Bridging operations on the Rhône will be carried out during this second period. On the evening of the 13th September will be combined, under the command of General Metzinger, and concentrated for Regular Army manœuvres. The 14h September will be a day of rest.

3rd Period.—On the 15th and 16th September, army manœuvres against a skeleton enemy will take place. After the manœuvres on the 16th September, the troops will assemble in the neighbourhood of Montélimar. On the 17th September the troops will disperse.

The programme of the South-Eastern manœuvres does not include a final review, but it is very probable that the President of the Republic, who will be staying, at that time, in his château near Montélimar, will be present at the concluding day's operations.

GERMANY.—*A New Quinquenniad.*—In the month of November next, the new Reichstag will deal with a new scheme for the army recruiting regulations, to replace the present military quinquenniad, which expires on the 1st October, 1904. The following are the chief outlines of the new scheme :—

The Bavarian Army does not figure in the statement. The idea of forming two new army corps on the Russian frontier, and in the Grand Duchy of Baden, has been abandoned. The words "new army corps" impress both the Parliament and foreigners disagreeably; it has therefore been considered preferable to reinforce the two frontier corps. At present the Ist (Königsberg) and the XIVth (Carlsruhe) Army Corps already consist of 3 divisions each, whilst the other 17 German army corps and the Royal Prussian Guards Corps have only 2 divisions each. The division of the Ist Army Corps, quartered at Allenstein, will be reinforced because, according to the opening statement to the new scheme, it says, "these troops are particularly exposed: they would receive the first shock of a Russian invasion of Eastern and Western Prussia." Consequently the 146th, 147th, 150th, and 151st Regiments, which at present consist of two battalions, will be increased to three battalions each. These regiments form the supplementary 37th Division, and are quartered at Sensburg, Bischoffsburg, Lick, and Allenstein. In addition, a new infantry brigade will also be formed at Allenstein. The peace strength, therefore, of this frontier army corps, will be increased by about 200 officers and 3,000 non-commissioned officers and men.

The XIVth (Carlsruhe) Army Corps will not be augmented provisionally, but as regards the XVIth (Metz) Army Corps, similar reinforcements will take place to those on the Russian fronter, viz. : by increasing from two to three battalions the strength of the regiments quartered at Saint Avold and at Metz; this will mean an increase of about 2,000 officers, non-commissioned officers and men. The 7th (Bückeberg), the 9th (Ratzeburg), and the 11th (Marburg) Foot Jaeger Battalions, as well as the 1st Battalion of the 150th Infantry Regiment, will each receive a machine gun section of 4 officers and 64 non-commissioned officers and men. On account of paucity of funds, the Saxon and Württemberg infantry will not be increased.

The preamble lays stress on the increase of cavalry in both France and Russia, whilst the German cavalry has remained stationary from 1872 to 1897. As with the infantry, so with the cavalry, will the Russian frontier reap the benefit of the new cavalry squadrons. The regiments of mounted Jaegers, quartered at Posen and Graudenz, will be completed. The Saxon cavalry will be increased by three squadrons at Chemnitz. A cavalry regiment of the VIth (Silesian) Army Corps will be attached to the XVIIth (West Prussian) Army Corps to guard the Russian frontier, in spite of the protestations of the inhabitants of the towns, who have been heavily taxed for the construction of barracks. In the face of the necessity for reinforcing the Russian frontier, it has been found impossible to pay attention to these complaints.

The plans for changing the armament of the artillery have been abandoned, the Commission having declared that the present German field artillery is as good as the new French. The new guns, about which so much has been said during the last few months, and the manufacture of which has cost enormous sums, have been provisionally given up. The Government only asks the Reichstag for the formation of a new artillery regiment at Allenstein, and the reason for this increase is as follows : "In spite of the Russian defensive works on the Bug and the Narew, and notwithstanding the *forts d'arret* at Pultusk, Ostrolenka, and Lomska, the German staff has no hesitation in counselling an offensive action. The only regiment of artillery quartered at Allenstein does not suffice for this initial operation." Several improvements in the gun teams are proposed.

The transport of the Ist (Königsberg) Army Corps, which would be called upon to play an important *rôle* on mobilisation, will be increased. Finally, it is found necessary to form new disciplinary companies. The increase of crime amongst young men who have not completed their military service has assumed regrettable proportions. The disciplinary companies at Ehrenbreitstein, Königsberg, Magdeburg, Mainz, Dresden, and Ulm, do not suffice for the reception of men undergoing punishment. The War Minister therefore asks for the formation of a seventh disciplinary company at Posen. It is probable that the new scheme will be proposed like its predecessor, for a fresh period of 5 years, with the maintenance of two years' service in the infantry. The effectives in peace time will, in round numbers, be increased by 10,000 men.

Promotion of Non-Commissioned Officers of the Regular Army and of the Reserve.—

REGULAR ARMY.

A Cabinet order, dated the 11th April, 1903, lays down the regulations with regard to the promotion of non-commissioned officers of the regular

army in peace time. The new dispositions, both in form and at bottom, resemble those edited on the 19th October, 1899: they only present the following modifications:—

1. Deserving men who might attain to the rank of supernumerary lance-sergeant (that is to say, without the pay of the rank) were formerly limited to certain special classes such as clerks, sergeant drummers, etc.; in future every non-commissioned officer of recognised merit and of exemplary conduct may obtain the same favour at the end of 9 years' service; the number of these non-commissioned officers is fixed at 1 per company, squadron or battery. This measure will have the effect of increasing the number of lance-sergeants, that is to say, non-commissioned officers who, in Germany, are charged with the supervision of drills, exercises, etc. Many officers will thus be freed from the details of service.

2. The rules for the nomination to the ranks of sergeant and lance-sergeant are the same as formerly, but with this restriction, that the non-commissioned officers selected should be prepared to take up their duties from the moment of their appointment.

In this manner will be avoided the nomination of non-commissioned officers, from amongst the candidates, to important appointments who, with a view to obtaining civil employment, are detached from the corps to go through courses. The new regulations do not, any more than the old ones, lay down the minimum period of service to pass from one rank to the other. Seniority of service, and the number of non-commissioned officers per company, squadron or battery, are the two factors which regulate promotion in the various units; changes, too, in the interior economy of regiments, battalions or groups, to equalise the seniority of non-commissioned officers in companies, squadrons or batteries, are still the exception, and can only be made with the consent of the commanders of the units interested.

Reserve and Landwehr.

The Cabinet order regarding the promotion of non-commissioned officers of the regular army was preceded some weeks before by another order, dated the 19th March, 1903, which fulfilled the same object with regard to non-commissioned officers of the reserve. According to the German press, the object of the new regulations is to diminish the number of non-commissioned officers to be demanded from the regular army for the formations to be constituted on mobilisation, so as to leave the regular army free. The following are the chief dispositions:—The Imperial decision first sets forth the necessity of possessing, on mobilisation, a corps of capable and devoted non-commissioned officers, and of sufficient strength; it draws the attention of corps commanders to this point, and orders them, at the time of their inspections, to satisfy themselves with regard to the military instruction of non-commissioned officers and those aspiring to non-commissioned rank. These aspirants may be obtained from:—

a. Voluntary enlistments for 1 year, not fitted for officers' instruction, but fit to make good non-commissioned officers of the reserve or landwehr.

b. Instructors or assistant instructors who do not complete their period of service as 1 year enlistments.

c. A certain number of men, fixed at 5 per cent. of the men discharged per company, squadron, etc.

Candidates may be appointed non-commissioned officers after having given proof of ability during their first drill period. Police information sent to corps commanders from their landwehr district serves to confirm the opinion or otherwise of the corps commander who has the right of appointment.

Reserve non-commissioned officers who have gone through two periods of 4 weeks' training as non-commissioned officers, or who have served 5 years in the regular army, and who have gone through a training period of 14 days, may be proposed for the rank of lance-sergeant by their district commander. The nominations are made by the army corps commanders or by the permanent inspectors of the branch of the service interested; they should be made in sufficient numbers to provide an average of 8 non-commissioned officers to 1,000 reserve men.

German Mountain Artillery.—Before the Chinese Expedition Germany possessed no mountain artillery. It was only in the autumn of 1900, many weeks after the departure of the bulk of the Expeditionary Corps, that two mountain batteries were formed and numbered, respectively, 7th and 8th Batteries of the East Asiatic Field Artillery Regiment. They were raised at Juterbog from a 7-cm. *matériel* provided by the Krupp works. It required 4 mules to transport the gun: 1 for the gun itself, 2 for the carriage, which divided into two parts, and 1 for the wheels, axle, and shafts.

Amongst the officers selected, only one, a former instructor of the Chinese Army, was acquainted with the service of mountain artillery. The men could not be drilled before embarkation, owing to the dearth of pack animals, which were only obtained on arrival in China. Only a little gunnery practice was carried out, which gave good results. Six artillerymen and 5 conductors were required for the service of the gun, 4 of the latter for the gun mules, and 1 for the ammunition. The gunners were armed with the carbine, in the use of which they were drilled during the voyage. It was at Tien-tsin that the batteries were actually formed. They there received handsome American mules, which were later joined by Chinese mules, smaller and less handsome, but equally hardy and strong. Officers and non-commissioned officers were mounted on Chinese ponies.

The 7th Battery was sent to Pao-king-fu; the 8th was split up into sections at Yang-tun, Ma-ton, and Pekin. Both took part in numerous mountain columns and did well. This is what the *Militär-Wochenblatt* says with regard to their mobility:—"The mountain gun can go everywhere where the individual soldier can go, and what is essential, equally rapidly." At the conclusion of active operations, one of the mountain batteries was kept for some time at Shanghai, a flat country, but without roads, greatly cut up by canals and paddy fields, and consequently inaccessible to field artillery. This battery was disbanded on the 3rd January last, on the reduction of the German troops in the Far East. The mountain artillery could move freely on the narrow Chinese footpaths, frequently only a foot wide. An article in the *Militär-Wochenblatt*, from which this information was derived, regrets that a mountain battery has not been retained in the German service as a school for the training of a *personnel* for such batteries in colonial wars. The only mountain battery now in existence in the German Army is quartered in South-West Africa, where it was formed as a result of the experience acquired in the Far East.

Amongst the Powers who had mountain batteries in China, the Italians held the record for rapidity in unloading for action and reloading the battery on their mules, in 40 seconds. As a rule one minute and a half was allowed by German batteries for the loaded battery to be got ready to open fire in broken ground; on the drill ground one minute was allowed for the same purpose.—*La France Militaire, Revue Militaire,* and *Militär-Wochenblatt.*

ITALY.—*Grand Manœuvres.*—The programme of the approaching grand manœuvres have recently been issued by the Chief of the General Staff, in accordance with instructions received from the Minister of War. They will take place this year in Venetia, between Padua and Belluno, and will last for about ten days. In addition to the troops already mentioned in the JOURNAL for June last, those effectives will be reinforced by the calling out two classes; the 1879 class, which will be called out throughout the whole kingdom, and the 1876 class, which will only be called to the colours for those corps taking part in the manœuvres. The artillery will be constituted in accordance with the new organisation about to be adopted in consequence of the taking into use of the new *matériel.* All the Regular divisions will have the new *matériel,* and there will consequently be 20 batteries armed with the new gun, taking part in the manœuvres. All the most important of the military departments will be formed on a war footing.

The commanders of the two opposing forces will have perfect liberty of action given them for the manœuvring of their troops, compatible with the attainment of the proposed object in accordance with the scheme issued to them. At the commencement of the manœuvres the two forces will be placed at a considerable distance from one another. The operations will thus be preceded by cavalry scouting and reconnaissance on a large scale. So as to arrive at a decision on the results of the various encounters, the director of the manœuvres will have a number of officers of the highest rank placed at his disposal as umpires. The Umpire in Chief will be General Mainoni d'Intiguano, commanding the VIth Army Corps. In order to keep himself constantly informed of the respective positions of the two forces, the director will employ a certain number of officers to fix the positions of the various units, and to acquaint him with their intentions as soon as possible. Each force will be reviewed at the point of concentration, before the commencement of the grand manœuvres. The necessary movements for concentration will nearly all be made by railways, on account of the numbers to assemble. There will be about 60,000 men and 12,000 horses to be moved. The dislocation will also be made by rail.—*Précis from La France Militaire.*

RUSSIA.—*Military Service in Finland.*—A regulation of the 12th July, 1901, changed the conditions for military service in Finland, as laid down by a regulation of 1878. The general dispositions of the new regulation differ slightly from those in force for the rest of the Russian Empire, and are designed eventually to effect the fusion in the conditions of service of the Finnish and Russian contingents. The following are the principal differences existing at the present time.

The Finnish contingent will be enrolled, according to a new order, only in corps composed chiefly of men of Finnish origin; the drawing of lots will

take place on the 15th April and the 22nd June; Russian subjects, not natives of Finland, but residing in the Duchy, are entitled to carry out their military service, according to the special regulation for Finland, if they have been domiciled there for at least two years. Natives of Lapland are, according to the new order, exempt from military service. The total period of service in the permanent army is, as in Russia, 18 years, but service in the regular army is only for 3 years, and the age for being called to the colours is nine months older, as young men are slower to reach complete development, owing to the climate. The Finland Militia forms a portion of that of the Empire, and its new organisation and rules for employment are the same as those of the latter. There is only one category of conditionally enlisted men, who are only required to complete one year's service in the regular army.

The contingent for 1903 is a very reduced one (190 men), and appears to be meant exclusively for the Finland Chasseur battalion of the Guard stationed at Helsingfors. The other special Finnish corps have been abolished, and those that have replaced them are, at present, recruited entirely from Russians. In the month of April of this year, the troops of the Finland district were the following, viz.:—1 Finnish battalion of the Guard, 2 Finland Chasseur brigades of 4 regiments of 2 battalions each, the 55th Finland Dragoon Regiment, 1 group of 2 sotnias of Orenburg Cossacks, the 6th Squadron of Field Police, the Finland Artillery Regiment of 4 batteries, an artillery park, and the fortress troops quartered at Sweaborg and Viborg, viz. :—

a. At Sweaborg.—1 infantry fortress regiment of 2 battalions, 2 battalions of fortress artillery of 4 companies each, 1 fortress sapper company, and 1 second class telegraph section.

b. At Viborg.—1 infantry fortress battalion, 1 artillery fortress battalion of 4 companies, 1 sapper company, and a detachment of sappers.

Division of Finland into territorial recruiting districts.—A Circular of the General Staff, dated the 31st October, 1902, gives the new partition of Finland into territorial recruiting districts, viz. :—

Government of Nyland.—1 district, headquarters at Helsingfors.

Government of Abo-Björneborg.—2 districts, headquarters at Abo and at Björneborg.

Government of Tavastehus.—1 district, headquarters at Tavastehus.

Government of Viborg.—2 districts, headquarters at Viborg and at Serdobol.

Government of Saint-Michael.—1 district, headquarters at Saint Michael.

Government of Knopio.—2 districts, headquarters at Knopio and at Johensu.

Government of Wasa.—2 districts, headquarters at Nikolaistad and at Jväskylä.

Government of Uleaborg.—2 districts, headquarters at Uleaborg a at Brahestad.—*Revue Militaire.*

SWITZERLAND.—*Target Practice.*—According to the regulations now in force in the Federal Army, two of the four existing army corps are called out each year. The infantry belonging to the corps which take part in the grand manœuvres do not receive any ball cartridge, but the other corps who do their 18 days' training biennially, draw 80 rounds per man.

The Landwehr infantry, 1st Levy, called up every 4 years for a training of 5 days for the men and 9 for the cadres, the days of coming up and going down not included, draw 50 rounds per man. Further, in conformity with Article 104 of the Law on Military Organisation, all company officers, non-commissioned officers, and men armed with the rifle belonging to the Regular infantry or Landwehr, who are not called up for service during the year, are obliged annually to go through a compulsory course of musketry, in addition to the musketry practice carried out when they are called out.

These obligatory musketry practices are generally held in the civilian voluntary shooting societies, and are very stringently organised, the law punishing severely every species of fraud. The number of these societies in 1902 was 3,595, and included 213,507 members, 141,771 of whom took part in these compulsory musketry practices, for which each one of them receives 1 franc 50 centimes as a subsidy from the Government. Cartridges are given them at 50 centimes apiece, which may be expended on the obligatory practices or not. Each man must fire 20 rounds for the obligatory musketry, and if he does not attain a certain proficiency, the practice must be extended to 32 rounds, after which he has finished for the year.

During 1902 these societies expended 16,422,000 rounds for the 7·5 rifle, and 704,000 for the 10·4 rifle. Men who, by the autumn, have not carried out their obligatory musketry in one of the societies, are called up for a 3 days' course of military training without pay or travelling allowance, in order to carry out the practice. Their number in 1902 amounted to 2,054 men. In conclusion, the strength of the Swiss infantry on the 1st January, 1903, was as follows :—

	Men.
Regular Army (12 classes)	112,290
Landwehr, 1st Levy (7 classes)	39,975
Landwehr, 2nd Levy (5 classes)	22,619
Total	174,884

The number of rounds expended by the Army in 1902 amounted to 23,341,754 rifle ball cartridges, and 1,873,108 revolver or automatic pistol cartridges. The cadets, a species of school battalions, numbered 6,420 men, of whom 3,065 fulfilled certain musketry obligations entitling them to a Government subsidy of 5 francs per cadet. These numbers will show how popular shooting is in Switzerland. Finally, it should be added that every commune is obliged by law to lay down a permanent rifle range for 300 and 400 yards.

Recruiting.—The number of recruits enrolled in 1902 amounted to 16,494 : of these 15,697 were exercised (390 more than the previous year), of whom 11,400 belonged to the infantry, 582 to the cavalry, 1,730 to the artillery, 639 to the engineers, 639 to the fortress troops, 550 to the medical service, and 157 to the administrative services.

Military Expenditure for 1901.—The expenditure of the Federal War Department amounted, in 1901, to 28,388,000 francs, as against 27,703,000 francs in 1900, or a difference of more than 685,000 francs, and exceeded by

538,000 francs the previsions of the budget. The increase in expenditure was due chiefly to the following credits :—

	Francs.
Administrative *personnel*	41,000
Instruction	557,000
Clothing	34,000
Armament and equipment	73,000
Officers' equipment	44,000
Remounts	68,000
Subsidies to Volunteer Societies	244,000
Fortifications	120,000
Administration and provisioning	64,000

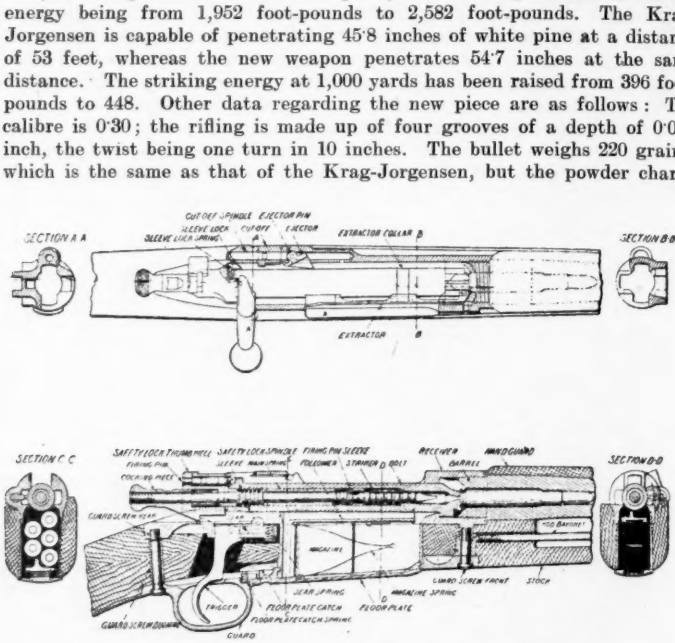
On the other hand, the expenditure under other headings amount to less than was calculated, for example :—

	Francs.
For instruction of *personnel*	18,000
For war *matériel*	168,000
For military establishments, fortifications, etc.	286,000
For arrears of pay	43,000

The increase of considerable expenditure under "Instruction" is chiefly due to the numerous indemnities for damage to property, paid on account of the last manœuvres, which amounted altogether to 361,627 francs 50 centimes. The decrease in the expenditure for "Military establishments, fortifications, etc." are explained by the fact that the works of construction of forts are approaching completion. As the receipts of the War Department amount to 3,159,000 francs, the net expenditure is reduced to 25,229,000 francs, as against 24,606,000 in 1900, or a difference of 623,000 francs, not much higher than the difference in the gross expenditure.—*Précis* from *Revue du Cercle Militaire* and *Revue Militaire*

UNITED STATES.—*The New Springfield Magazine Rifle.*—The new Springfield magazine rifle, which has undergone its preliminary tests with very gratifying results, will take the place of the Krag-Jorgensen, which now, for several years, has been doing excellent service in the United States Army. On p. 850 is a line drawing which shows several sectional views of the gun. By means of the carefully-lettered parts a good idea is obtained of the details of the gun. The weapon is supplied with a cleaning rod, which can be partially pulled from its place below the barrel, and held with a catch so as to form a bayonet. The great advantage of the rod-bayonet is that it lightens the weight made up of the gun, bayonet, and bayonet's scabbard, and, by dispensing with the latter two as separate articles to carry, permits the soldier to carry with him an intrenching tool of sufficient size and weight to be serviceable. While there is some diversity of opinion as to the value of the rod-bayonet, which is considered to be less effective than the type now in use, it still is of value as converting the musket into a pike. Moreover, in view of the growing value of the intrenching tool and the ever-decreasing opportunities for the use of the bayonet, the substitution of an intrenching tool for the latter is certainly in line with the recent development of field operations. The piece is centrally fed by means of clips, each of which holds five cartridges, and it will be noticed that the bolt has two lugs instead of one, as in the old gun. In the last report of the Chief of Ordnance the trials of the piece are spoken of as

having given "very satisfactory results." The chief points of difference from the Krag-Jorgensen are this use of two lugs in place of one for holding the bolt against the rearward pressure of the powder — the increased strength so obtained being sufficient to allow of an increased velocity with the same weight of bullet, from 2,000 feet per second in the Krag-Jorgensen to 2,300 feet per second in the new piece, the resulting increase in muzzle energy being from 1,952 foot-pounds to 2,582 foot-pounds. The Krag-Jorgensen is capable of penetrating 45·8 inches of white pine at a distance of 53 feet, whereas the new weapon penetrates 54·7 inches at the same distance. The striking energy at 1,000 yards has been raised from 396 foot-pounds to 448. Other data regarding the new piece are as follows: The calibre is 0·30; the rifling is made up of four grooves of a depth of 0·004 inch, the twist being one turn in 10 inches. The bullet weighs 220 grains, which is the same as that of the Krag-Jorgensen, but the powder charge



Details of the New Springfield Army Rifle.

has been raised from 37·6 to 43·3 grains. In spite of the considerable increase in its power the weapon has been greatly reduced in weight; for while the present service magazine rifle weighs 10·64 lbs., and the Mauser 10·5 lbs., and the German military rifle 11·54 lbs., the new weapon weighs only 9·47 lbs. It follows, as a matter of course, that, with such high velocity and fairly heavy bullet, the trajectory is correspondingly flat, the maximum ordinate of the 1,000-yard trajectory being only 20·67 feet, as against 25·8 feet for the Krag-Jorgensen, 24·47 for the Mauser, and 23·73 for the German military rifle.

In addition to those mentioned above there are other improvements, such as housing of the magazine in the stock directly below the chamber, instead of having it project at the side of the gun, and there are many changes of detail which both improve the rifle and cheapen and accelerate its production.

In closing it should be mentioned that the new gun is considerably shorter than any existing rifle, and is only slightly longer than the military carbine.

New Springfield Magazine Rifle compared with the Krag-Jorgensen, the Mauser, and the German Military Rifle.

	Springfield magazine rifle.	Service magazine rifle.	Mauser 7-mm. rifle.	German military rifle.
Calibre ... ... inch	0·30	0·30	0·275	0·311
Rifling:				
Number of grooves	4	4	4	4
Depth of grooves ... ... inch	0·004	0·004	0·0049	0·004
Twist, one turn in ... ...inches	10·	10·	8·66	9·45
Weight of bullet ... ...grains	220	220	173	226·82
„ charge ... ... „	43·3	37·6	38·58	41·2
„ complete cartridge „	451·15	438·85	385·63	430·24
Initial velocity, feet per second ...	2,300	2,000	2,200	2,145
Remaining velocity at 1,000 yards	958	901	895	906
Muzzle energy ... ... foot-pounds	2,581·6	1,952	1,857·4	2,135
Striking energy at 1,000 yards foot-pounds	447·9	396·2	307·4	413
Penetration in white pine at 53 feet ... ... inches	54·7	45·8	50·8	—
Weight of rifle, including bayonet and scabbard ... pounds	9·47	10·64	10·5	11·54
Weight of rifle, including bayonet, scabbard and 100 cartridges ... ... pounds	15·91	16·91	16·18	17·68
Capacity of magazine ... rounds	5	5	5	5
Maximum ordinate of 1,000 yards trajectory ... ... feet	20·67	25·8	24·47	23·73

—*Scientific American.*

CORRESPONDENCE.

Re MEMORIAL TO THE 12TH SUFFOLK REGIMENT.

To the Editor of the JOURNAL OF THE ROYAL UNITED SERVICE INSTITUTION.

SIR,—Would you be able to insert in your next JOURNAL the following notice?

It is proposed to erect in Bury St. Edmunds, which is the depôt of the Regiment, a memorial to the men who fell in the late war in South Africa.

The committee think that besides the *local* appeal, which has been well responded to, there may be some outside the county who would be glad, either from former connection with the 12th Regiment, or personal association, to give support to the proposed memorial.

Subscriptions of any amount will be received by Messrs. Cox & Co., Army Agents, 16, Charing Cross.

Yours very truly,

W. A. TOLLEMACHE,
Late 2nd Life Guards.

Risby,
Bury St. Edmunds,
25th June, 1903.

NAVAL AND MILITARY CALENDAR.

JUNE, 1903.

1st (M.) The French Governor-General Jonnart was attacked in Algeria.

" " The Abyssinians routed the Mullah's forces in Somaliland, killing 1,000 spearmen.

2nd (T.) Launch of first-class cruiser "Kagul" at the Imperial Russian Dockyard, Nicolaieff, for Russian Navy.

" " H.M.S. "Exmouth" commissioned at Chatham for Mediterranean.

3rd (W.) The Army Railway Council was re-constructed.

4th (Th.) Sentences on the majority of South African ex-burghers, convicted during the campaign, were remitted.

6th (Sat.) Launch of first-class gun-boat "Eber" from the Vulcan Yard, Stettin, for German Navy.

8th (M.) The French bombarded Figuig.

11th (Th.) King Alexander and Queen Draga of Servia were assassinated at Belgrade.

15th (M.) H.M.S. "Exmouth" left Plymouth for Mediterranean.

" " Prince Peter Karageorgevich was elected King of Servia.

16th (T.) H.M.S. "Leviathan" commissioned at Portsmouth for China.

" " Launch of third-class cruiser "Almas" from New Admiralty Yard, St. Petersburg, for Russian Navy.

17th (W.) Intelligence received of a check to the British force at Sokoto.

18th (Th.) H.M.S. "Mercury" commissioned at Portsmouth as Cadet training-ship.

" " An explosion of lyddite occurred at Woolwich Arsenal; 16 men killed and 14 injured.

21st (S.) Major-General Sir C. Egerton, K.C.B., D.S.O., appointed to the command of the Somaliland Expeditionary Force.

24th (W.) News received from Somaliland that the Obbia force had reached Damot.

25th (Th.) H.M.S. "Hood" commissioned at Devonport.

26th (F.) H.M. the King's birthday was celebrated.

" " General Manning and the Obbia Force arrived at Bohotle from Damot without opposition.

27th (Sat.) Launch of first-class armoured cruiser "Roon" from Imperial Dockyard, Kiel, for German Navy.

29th (M.) H.M.S. "Victorious" arrived at Plymouth from Mediterranean.

30th (T.) H.M.S. "Spartiate" arrived at Portsmouth with relieved crews from China.

" " H.M.S. "Europa" arrived at Plymouth with relieved crews from China.

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UNITED STATES.—*Journal of the United States Artillery.*—Fort Monroe: May-June, 1903.—"Deviating Effect of Wind." "Some Notes on the Practical Effect of Wind on Rifled Projectiles." "Report on the Wadsworth System of Fire Direction." "Earth or Armour Protection for Sea Coast Fortifications." "Rear Sight and Telescopic Sight for Field Guns and Howitzers." "The Proper Equipment of a Mountain Battery."

"Special Report of Firing with Vickers-Maxim Q.F. Mountain Gun." "Field Artillery Side Issues from a Veterinary Standpoint." "Professional Notes." "Book Reviews."

The United Service. New York: June, 1903.—"American Cavalry." "Buttons." "The Phantom Fleet." "Washington at Valley Forge." "Military Flotsam and Jetsam." "From Generation to Generation." "Reminiscences of Plevna." "Our Contemporaries." "Service Salad." "Major-General Charles Heywood, Commandant U.S.M.C."

NOTICES OF BOOKS.

The Naval Annual, 1903.— Edited by T. A. Brassey. Portsmouth: Griffin & Co.

The new edition of the "Annual," although there is a distinct improvement in the printing and arrangement of the useful matter contained in the tabular lists of the ships of our own and foreign Navies, which make up Part II. of the volume, is in some respects more open this year to criticism than is generally the case.

Part I., as usual, consists of a series of short papers by the Editor and other writers, more than one of which is of a somewhat controversial character, containing statements which, to put it mildly, are decidedly open to question. We have never held with this feature of the "Annual," to which, in the opinion of many competent critics, the Editors have always attached an exaggerated importance, except in those cases where the papers are devoted to giving definite information on matters of naval interest, details of which may reasonably be looked for in a high-class work of reference; such a paper, for instance, is the one by Mr. Brassey himself on Naval Works in the present issue.

It is a pity that the Editor, even in his preface, commits himself to various statements, which are in direct opposition to the views almost universally held by naval experts. A volume, which aims at being considered a standard work of reference, should deal with facts as they are, and statements necessarily of a controversial nature should find no place in it. The introductory chapter, by Lord Brassey, contains some interesting ideas, but some of his lordship's suggestions, as, for instance, that we should adopt the French system of reducing the complements of the ships, presumably of our Mediterranean, Channel, and Home Fleets, with the Cruiser Squadron, for 6 months in the year and fill them up from the Reserves when required, are not likely to find favour with the Admiralty or the bulk of opinion in the Service. If we ever have to strike, we must be prepared to strike at once and hard; this we are now in a position to do; but if Lord Brassey had his way, we should lose this power, and the efficiency of our fleets would be hopelessly impaired. Chapters I. and II., on the progress of our own and foreign Navies, follow the usual lines, and call for no comment; as much, however, cannot be said for Chapter III., in which Mr. Brassey reviews the comparative strength of our own and other fleets. It is unfortunate, but probably unavoidable, that the details with regard to the composition of the French squadrons are in some respects inaccurate and already out of date. The armoured cruiser

"Amiral-Gueydon," for instance, instead of going to the Mediterranean is under orders for China, while the "Jurien de la Gravière," instead of going to China, relieves the "D'Estrées" in the Atlantic. Other changes foreshadowed in this chapter have been already cancelled, whilst a curious blunder assigns the "Guichen" and "Sfax" to the China Squadron, although the first-named belongs to the Squadron of the North, and there has been no intention of detaching her to China, while the latter is in the second category of the Reserve at Brest. We are quite unable to follow Mr. Brassey in his view that the strength of the Mediterranean fleet is excessive, and he does not seem to have grasped the principles on which the recent re-organisation of our fleets is based; nor can we agree with him that the extensive works, now being carried out at Dover, are in any way rendered less necessary by the determination of the Admiralty to create a new naval base in the Firth of Forth.

It is not easy to understand the object of the new classification adopted in the comparative tables of the British and foreign cruisers. No objection can be raised to that of the battle-ships, but if it was incongruous in former issues of the "Annual" to class the "Blake," "Blenheim," or the ships of the "Edgar" type with the "Drakes" and the "Cressys," it is just as much so to class them with the "Diana," "Gladiator," etc., as has now been done. It would be an infinitely simpler arrangement and much more useful to non-experts, to class the armoured cruisers by themselves, as is done in more than one of the foreign works of reference, and a much better classification of the protected cruisers could then be made. The new system adopted in the "Annual" seems only to make confusion worse confounded.

Chapter IV., on "Submarine Cables," by Lieutenant Carlyon Bellairs, R.N., is interesting and readable; the writer has made a study of the question, and has put together a good deal of valuable information. Chapter V., by the Editor, on "Naval Works," with the excellent plans of the great works now in progress at our naval stations at home and abroad which accompany it, also contains much valuable and interesting matter, and the same may be said of Chapter VI., on "Marine Engineering," which Mr. Dunell again contributes this year. Mr. Leyland's review of the principal foreign manœuvres of last year in Chapter VII. calls for little comment, except that more detailed accounts than he has given were published months ago; while the two excellent plans of the first and second strategical schemes carried out during the French manœuvres appear to have simply been reproduced bodily from the *Marine-Rundschau* of last October, and we think that some acknowledgment of the source from which the "Annual" derived them should certainly have been made. With much of Mr. Thursfield's criticism on the Mediterranean manœuvres in Chapter VIII. it is impossible not to agree; Mr. Thursfield is one of the few civilian writers on naval matters whose opinions carry weight, but we regret to see that he repeats the statement, made on quite erroneous grounds in the *Times* some eight months ago, that information, not available to English papers and readers, in regard to our naval manœuvres last year, has appeared in a German service periodical. The periodical in question is presumably the excellently written *Marine-Rundschau*, which is published monthly in Berlin. In October last year there appeared, with one or two elaborate diagrams, what purported to be a short account of the manœuvres of the Channel Squadron and Home Fleet, which had taken place in the Channel in the previous July. Shortly afterwards appeared a portentous leading article in the *Times*,

taking the Admiralty to task for the policy it had recently adopted in excluding reporters from the manœuvring fleets, and pointing out, referring to the article in the *Marine-Rundschau*, that foreign writers were evidently able to obtain access to confidential information, which was refused to our own people. The *Times* leader-writer had clearly not taken the trouble to read the German article for himself, for its author, probably one of the skilled naval officers on the staff of the *Marine-Rundschau*, prefaced his account by saying that "*owing to the representatives of the press being excluded from the fleet by the Admiralty, it was impossible to give any detailed account of what took place, but that it was possible, with the knowledge of previous manœuvres to work on, to draw what was probably a fairly accurate picture of what had taken place*," and this he proceeded very cleverly to do, with the aid of the letters which had appeared in the *Naval and Military Record*. In his concluding paragraph, the writer again repeated that he regretted that "*owing to the secrecy imposed by the Admiralty it was impossible for anyone not in the know to state what tactical lessons had been learnt from the manœuvres*." In the December issue of the same German periodical, an article on the Mediterranean manœuvres, presumably by the officer who wrote the previous account to which we have referred, appeared, and again the writer laments that owing to the very meagre details, which had been allowed to appear, it was impossible to give any accurate account of what took place, although he proceeds to draw some fairly accurate conclusions, which was all an expert writer, as he modestly observes, under the circumstances, could do. We do not, therefore, see what grounds Mr. Thursfield has for his statement, unless something appeared in some other German service paper, which we have not seen, but which may give some colour to his view. Chapters IX. and X., by Lieutenant Bellairs and Admiral Sir R. Vesey Hamilton, are devoted to the new "Naval Training and Entry" scheme. Lieutenant Bellairs represents nobody but himself, and his views can hardly be said to carry weight; if it was necessary to have two articles on this subject, some writer of greater experience and authority could surely have been found to state the Admiralty view of the question. Sir Vesey Hamilton stands on different ground, he does write with authority and the advantages born of long experience in the service in some of the most important positions a naval officer can hold, and he, moreover, voices the views held by a no means inconsiderable section of the service at large, that the new scheme is quite uncalled for, is a veritable "leap in the dark," and will prove unworkable. His contribution to the discussion is an eminently readable one, and will be appreciated and enjoyed by all who may read it, and it is certainly far and away the best paper in the present issue.

We have already briefly referred to Part II., and the improvement which has been made in the printing and arrangement of the useful details contained in the tabular lists of ships, but there is room for further improvement; for instance, it would be certainly more convenient to designate all guns below the 4·7-inch by the weight of the projectile, especially as this is done in giving the armaments of English ships, for who is to know that a 3·4-inch German gun is a 15-pounder, or a 2·2-inch in a French ship is a 6-pounder, and so on? For the non-expert, who studies the tables, to have to hunt up what all these small calibre guns are, must be a hopelessly confusing business. There are also some inaccuracies still to be found in the armaments of some of the foreign ships, while the plans of many of the ships sadly need re-drawing. Still, the figures in

the tables are on the whole fairly trustworthy, much more so than those in the current issue of the "Aide-Mémoire de l'Officier de Marine," which at one time took the lead for accuracy.

Part III. is, as usual, devoted to armour, armour-plates and projectiles, progress in guns, mountings and gunnery, with the usual tabular lists of English and foreign guns at the end. There is much interesting and useful information in this part, and we are inclined to agree with many of the writer's strictures on the distribution of the armour in many of our latest ships; for it certainly would seem that the thickness of the water-line belt amidships, which is supposed to afford protection to the vitals of the ship, has been dangerously reduced in thickness, when compared to the protection given to the same part in many foreign ships, and there is much to be said in favour of a tapering of the belt below the water-line, which is the universal practice abroad, the weight thus gained being added to about the water-line, where the greatest protection is most needed.

In his preface the Editor asks for opinions as to the desirability of re-printing selected foreign naval documents, such as the Report of the Secretary of the United States Navy, and the Report of the French Budget Committee, etc.; to do so would, he points out, involve either a large addition to the size of the volume, or the omission of a number of the articles in Part I. In our opinion we think the proposed change would be an excellent one, if *précis* of the Reports in question were substituted for much that now appears in Part I. In particular, the Report to the Chamber of the French Budget is often a State paper of high value, containing much important information and statistics of value. Were a *résumé* made of these Reports by a really competent expert, we feel certain that they would be studied with interest by all readers of the "Annual," and add appreciably to its value.

PRINCIPAL ADDITIONS TO LIBRARY DURING JUNE, 1903.

War Record of the York and Lancaster Regiment, 1900-02. By Lieutenant A. H. C. Kearsey, D.S.O., with a preface by Colonel Kirkpatrick, C.B. 8vo. (Presented.) (George Bell and Sons.) London, 1903.

Service and Sport on the Tropical Nile. By Captain C. S. Sykes. 8vo. 12s. (John Murray.) London, 1903.

Enseignements de Deux Guerres Récentes—Guerres Turco-Russe et Anglo-Boer. By Général H. Langlois. 8vo. 4s. (H. Charles-Lavauzelle.) Paris, 1903.

Le Niger. By Capitaine Lenfant. 8vo. 9s. (Hachette et Cie.) Paris, 1903.

Zielbau-Vorschrift für Feld- und Fuss-Artillerie. Demy 12mo. 1s. 3d. (E. S. Mittler und Sohn.) Berlin, 1903.

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Frontier Warfare. Official. Demy 12mo. 1s. 6d. Simla, 1901.

The Lancashire Fusiliers' Annual, 1902. No. XII. Compiled and Edited by Major B. SMYTH. 8vo. (Presented.) ("The Irish Wheelman" Printing and Publishing Co., Ltd.) Dublin, 1903.

History of the 53rd, or 2nd Warwickshire Regiment of Militia, now the 6th Battalion Royal Warwickshire Regiment. 8vo. (Presented.) (Evans and Co.) Warwick, 1903.

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Tactique des Trois Armes. By General KESSLER. 2nd Edition. 8vo. 2s. 6d. (R. Chapelot et Cie.) Paris, 1903.

Practical Gunnery in the Lecture Room and in the Field. By Captain H. T. RUSSELL. 8vo. 2s. 6d. (Presented.) (Messrs. Gale and Polden.) Aldershot, 1903.

The Oxfordshire Light Infantry Chronicle for 1902. Vol. XI. Compiled and Edited by Lieut.-Colonel A. F. MOCKLER-FERRYMAN. 8vo. (Presented.) (Eyre and Spottiswoode.) London, 1903.

Callender of Letter-Books preserved among the Archives of the Corporation of the City of London. Letter-Book E. Circa A.D. 1314-1337. Edited by R. R. SHARPE. 8vo. (Presented.) (John Edward Francis.) London, 1903.

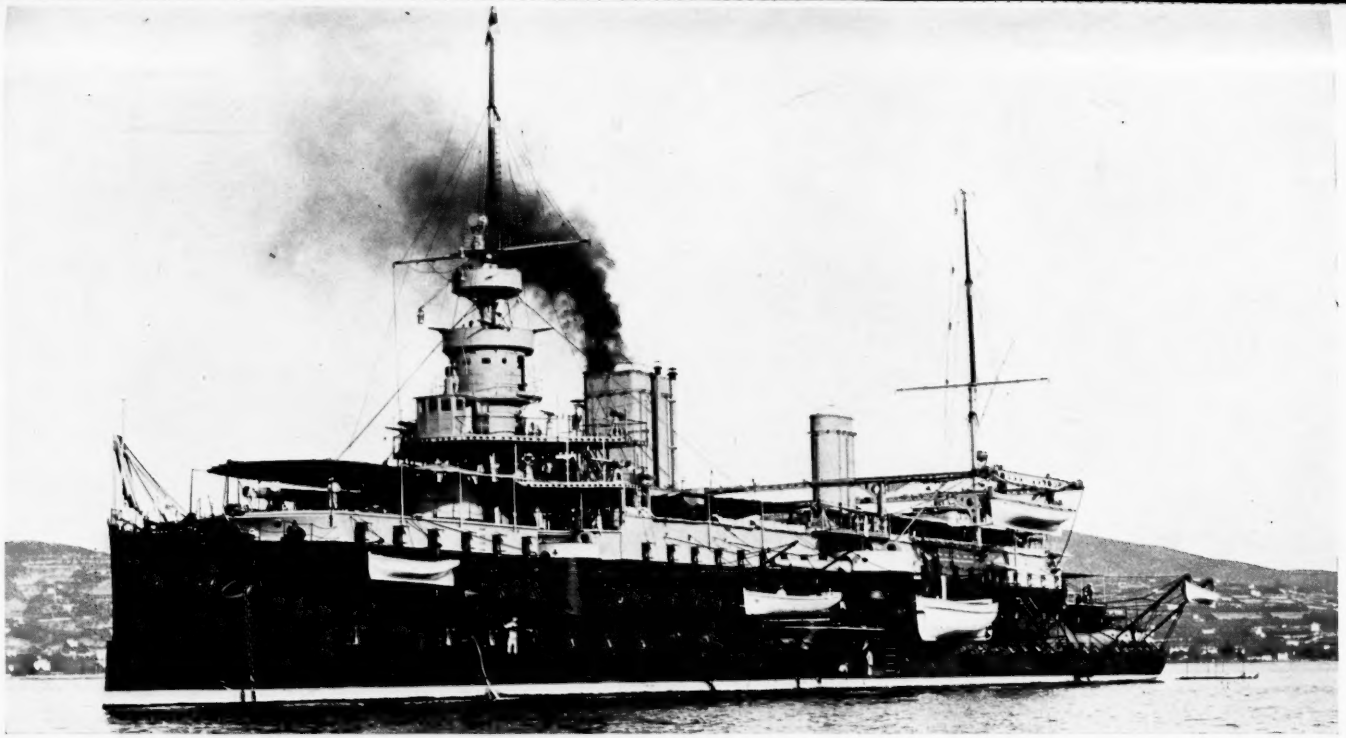
U.S. Geological Survey Monographs. Vols. XLII. and XLIII. By J. P. SMITH and C. H. VAN HISE. Demy 4to. (Presented). Washington, 1903.

The Military Instructor for the Non-Commissioned Officers and Private Men of the Infantry. By THOMAS SIMES. 2nd Edition. Demy 12mo. (Presented.) (H. Regnell.) London, 1778.

On the Veldt in the Seventies. By Lieut.-General Sir C. WARREN. 8vo. London, 1902.

The Flight of the King. By ALLAN FEA. 8vo. 21s. (John Lane). London, 1897.

King Monmouth. By ALLAN FEA. 8vo. 21s. (John Lane), London, 1902.



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